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SOME OF THE LARGER PROBLEMS OF THE MEDICAL PROFESSION *

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The profession of medicine enters into and touches every human activity from the first kindling of the vital flame until life's candle flickers out. The joys of being and the sorrows of life, the travail of labor and the relaxations of idleness, the opulence of riches and the meagerness of poverty have running through their web and woof the fine blue thread of the calling which has as its ideal the physical salvation of mankind. Throughout the nearly seventy years of its existence the American Medical Association has clung with unfaltering fidelity to the doctrine of the prolongation of human life and the relief of the miseries of man. In peace and in war, in prosperity and in public calamity, in crowded city and on isolated frontier, despite all opposition, it has moved steadily forward toward the goal of health, recognizing neither creed nor sect, neither school nor system, but solely the sacredness of its objects. The catholicity of its principles, the high altruism of its ideals, and the broad basis of its humanity have preserved it inviolate against the attacks of those who would revert to primeval incantations, ignorance and chicanery in the prevention and remediation of disease. The passage of the years is marked by a trail of discarded superstitions on the one hand and by the monuments of scientific progress on the other, and the very obstacles which have been thrown into the path which we have trod have proved stepping stones to higher ground.

Today, as we look back over the achievements of this Association, we receive inspiration from the work of those who have gone before us. The researches of our medical forebears are a priceless heritage, entailed for all future generations. But as we review the triumphs of the past and plan fresh victories for the future, our happiness in the joy of this pleasant reunion in the bonds of scientific fellowship is not without its note of sadness.

Since our last annual meeting death has called from our midst a number of the strong men of the profession of medicine. In the loss of that lovable and kindly gentleman, Dr. Edward L. Trudeau, the world has been deprived of a great leader in the antituberculosis movement. In the death of Surg.-Gen. George M. Sternberg our profession and the nation have lost an officer eminent in science and a pioneer in the field of military hygiene. In the passing away of Dr. Henry B. Favill the country has been robbed of a powerful intellect which was being more and more devoted to the cause of good government, clean politics, municipal improvement and sanitary progress. In the untimely death of Dr. William L. Rodman the Association has been bereaved of its President, and America has lost a distinguished surgeon and a public-spirited citizen. We would also remember at this time the members of our profession and Association who, through love of their fellow men, volunteered to serve mankind in those countries unhappily divided by war and stricken by pestilence, and who by so doing sacrificed their lives to the ideals of our profession.

By reason of their relation to the Association, we glory especially in the accomplishments of Rodman and Favill, and extend our condolences to their sorrowing relatives and friends, with whom we mourn. In the solemnity of this moment let us take inspiration from their lives, that their ideals may pass on to us, and that we may more faithfully discharge our duties to mankind.

The limitation of time does not permit the recitation of the scientific accomplishments since our last meeting, neither does it suffice to enumerate the fields of activity which lie fertile before us. The movement for race betterment, the increase of child hygiene and the restriction of child labor deserve and receive the approval and assistance of this body. The necessity for the advancement of the campaign for mental hygiene, the cure and prevention of tuberculosis and cancer, and the improvement in the collection of vital statistics, particularly morbidity statistics, is so great as to require no argument.

MEDICAL AND SANITARY EDUCATION

Since its inception the American Medical Association has endeavored in every way to raise the standard of medical education, and as the result of its labors there has been constant improvement, particularly in recent years. Not only are the graduates of today better qualified in the science of medicine than those of ten years ago, but they have a broader grounding in the general sciences as well. These are decided improvements, but should not satisfy us. As an Association, we should continue to urge and adopt every means which will better qualify medical men for their calling. Improved laboratory and hospital facilities are now being made available to medical students in greater degree, and the standard of medical practice is accordingly raised. Not enough attention is being paid, however, to the subject of hygiene, in either undergraduate or postgraduate courses. Thus far the members of the medical profession have been looked to

* President's address before the American Medical Association, at the Sixty-Seventh Annual Session, Detroit, June, 1916.

as the natural conservators of individual and community health. With the increasing interest in this subject, however, and the facilities for giving instruction in public health work being established in institutions other than medical schools, there is likelihood that in the future medical graduates will have sharp competition in a field which they should naturally occupy. The time is at hand when localities and states will demand the services of full-time health officers, and the medical profession should look forward to meeting this requirement. It is suggested, therefore, that the Council on Medical Education and the profession generally give greater attention to this growing need.

MEDICAL AND SANITARY PREPAREDNESS

The American Medical Association, as a national body, has come to bear an important relation to everything medical which affects the nation as a whole. It has, therefore, interested itself in the improvement of the Medical Departments of the Army and the Navy and the Public Health Service.

The Medical Department of the Army is charged with the duty of preserving the sanitary condition of the army and with certain important functions of administration and organization. In its relation to the people of this country by far its most important activity is along educational lines. Some thirty to fifty thousand young men join the army each year, and a similar number annually pass back to civil life. During the period these men remain in the army they come into direct contact with the medical department. Their ideas and standards as to housing, food, clothing, ventilation and lighting are all materially influenced by their sojourn in the army, and even more definite impressions are acquired from the medical department with reference to such matters as disease and its treatment, preventive medicine, temperance and recreations. At almost every point in his new environment the recruit comes into contact with the ideas and teachings of the army medical department, and he returns to civil life with a much broader and more enlightened view of hygienic principles.

The great lesson of the European war which we as medical men should take to heart is the importance of thoroughly preparing the medical and sanitary forces in time of peace, so that they may be ready to take their proper place and to efficiently relieve the sick and wounded and prevent disease in time of actual conflict. Not only must the land forces be put on the footing of highest efficiency, but it is perhaps even more important that the Medical Department of the Navy receive the active support of the entire citizenship. The multifarious character of the duties of the medical corps of the navy requires officers of broad training. This Association should continue in the future as in the past to afford to the Medical Departments of the Army and Navy every assistance in its power.

The problems which confront the Public Health Service are of a different character from those of the strictly military arms of the government. This organization is rapidly expanding to meet its duties in the protection of the health of the civilian population of the United States. The crying need of the Public Health Service at the present time is men and money. Congress has never been slow in imposing functions on the Public Health Service, but it has been extremely conservative in the matter of appropriations and increased personnel to discharge the added duties. As yet, Congress has not seen fit to establish a national department of health, and pending the creation of that much-needed department, the Public Health Service must perform the public health duties of the nation. It is incumbent on every citizen of this country who is interested in the conservation of human life to assist and cooperate with the Public Health Service.

ENLARGEMENT OF USEFULNESS OF HOSPITALS

One of the extremely important matters in which this Association should take an active interest is the utilization of hospitals in order that they shall not only have greater application in the relief of illness, but be of greater utility in times of national stress.

In many general hospitals there is opportunity to increase efficiency through organization. It is probable, for instance, that the most accurate knowledge of the distribution of certain preventable diseases could be obtained by regular reports from hospitals and dispensaries if these were comparable. Moreover, it should become possible in greater degree to admit many cases of illness, such as tuberculosis and venereal infections, now excluded, but which profoundly menace the public health. Hospitals are public servants and as such should be utilized to the fullest extent, not only in the relief of illness, but also for educational and public health purposes.

IMPROVEMENT AND STANDARDIZATION OF REMEDIAL PREPARATIONS

Further effort should be made to determine the availability and use of remedial preparations. The remarkably valuable work of the Council on Pharmacy and Chemistry is well known to you. As a result of its untiring efforts for more than a decade, our knowledge of useful remedies has been increased, the Pharmacopeia improved and the physicians' armamentarium made more serviceable. Much, however, remains to be done. The determination, for instance, of the value of biologic products used in the prevention and treatment of the diseases of man and the elimination of those which are without worth is a matter of urgent need, meriting the earnest consideration of this Association. While it is the province of the federal government to promulgate standards for these preparations, the determination of their therapeutic value is a function of the medical profession.

In the enforcement of the law regulating the propagation and sale of viruses, serums and toxins, it is possible for the Public Health Service to guard against the sale of contaminated preparations. It insures to physicians the full strength of those preparations for which standards have been devised, but it cannot guarantee the potency of preparations for which standards have not been fixed, and which practitioners generally are being urged to use in greater degree. In order to determine this potency, the medical profession has a duty to perform.

By encouraging therapeutic research along broad lines through hospitals and clinical laboratories, the Council on Pharmacy and Chemistry would facilitate the standardization of useful biologic preparations and restrict the exploitation of doubtful ones, thereby saving millions of dollars annually to the country. I would accordingly suggest that this be made the subject of intensive study, thus supplementing the researches already under way in respect to other preparations.

Through its helpful attitude, the medical profession has contributed to the enforcement of the antinarcotic

law. As a result, a multitude of data are being recorded to show not only the public health importance of the control of habit-forming drugs, but the additional measures that are necessary to this end. I doubt if any of us here present comprehend fully the social and sanitary significance of this vast problem and the relation of individual practitioners thereto. It should be our earnest effort to aid in restricting the use of narcotics for other than medicinal purposes, and thus aid in overcoming an evil of the gravest menace. While as an organization we may not influence specific legislation, it is entirely within our province to strive to mold public opinion, which will beget wise laws and proper provisions for their enforcement.

HEALTH INSURANCE

As a result of recent workmen's compensation laws and the increasing interest in the health of wage-earners, the subject of health insurance is rapidly coming to the front. This is a question which we as a profession will be called on to face in the not very distant future.

Studies of the economic and sanitary conditions affecting the health of the industrial population have shown the urgent need for more effective methods for the relief and prevention of disease among the 30,000,000 of persons who comprise this group. The unskilled, low-paid workers in every community have an excessive morbidity and mortality rate, which is largely accounted for by their economic status and living environment. A large proportion of this class have incomes insufficient to maintain healthful standards of living, much less to provide adequate medical and surgical care. This places a serious handicap on the medical profession, as well as a financial burden on the poorly paid wage earner, which neither should be wholly required to bear. The public, industry and the workers themselves are at least partially responsible for the faulty conditions, and in consequence should share in the remedial measures.

To meet the situation, there are unmistakable signs that health insurance will constitute the next great step in social legislation. Experience has shown that an adequate health insurance system should distribute the cost of sickness among those responsible for conditions causing it and thereby lighten the burden on the individual. Financial incentive may thus be given for the inauguration of comprehensive measures for the prevention of disease. I would accordingly suggest that the American Medical Association continue the studies, which have been as splendidly begun, of the results of health insurance in all its aspects in this and in foreign countries, so as to decide on a program which would properly coordinate any proposed health insurance system with existing agencies for the cure and prevention of disease.

INDUSTRIAL HYGIENE

Closely allied to this is the study ot industrial hygiene, a subject which will receive careful consideration in the Section on Preventive Medicine and Public Health at this session. Too many safeguards cannot be thrown about the health of operatives in industry, but we should consider the problem as it relates, not only to the workshop and factory, but to home conditions as well. Factory sanitation will fail of the highest accomplishment unless the workman is educated in the hygiene of his body and the sanitation of his home. The relation of the wage to disease, the housing problem and the health training of operatives are therefore matters which I would commend to the attention of the Council on Health and Public Instruction.

RURAL SANITATION

Rural sanitation is a matter of even greater importance. Over 53 per cent. of the population of the United States dwells in communities of less than 2,500 inhabitants, in many cases under most insanitary conditions. This is a menace not only to the health of the rural dweller, but also to that of the urban resident. The next great point of attack against infectious diseases is the small town and village. The work which the Public Health Service has been carrying on in cooperation with state and local health authorities in rural counties shows not only the necessity for increased and more widespread activity in this direction, but also that great good may thus be accomplished at relatively little cost. It is incumbent on this Association, possessed as it is of the machinery for popularizing health movements, to undertake a definite campaign for bringing health education to our rural population. If this is well done there will be a direct result in the reduction of typhoid fever, malaria and hookworm disease in the country and an increased safety in the food supplies of cities. I cannot too strongly urge on this body the necessity for intensive efforts toward the improvement of rural sanitation.

PUBLIC HEALTH ORGANIZATION

In the accomplishment of this purpose, however, we cannot stop with the sanitary enlightenment of the country inhabitant. Much he can and must do for himself, but lasting good cannot be accomplished in the absence of adequate state and local health organizations. An examination of existing laws and regulations shows that some of the states have an abundance of public health legislation. In fact, in many instances the powers and duties of the sanitary authorities far exceed the appropriations for their execution. Still others have defective laws and low appropriations, while some have little law and almost no appropriations.

In many instances considerable improvement in organization will be necessary before health authorities can functionate properly. These defects are being remedied, and many states are rapidly approaching a high degree of efficiency in their public health administration. In the counties and small municipalities, however, the greatest need for reform exists, and this Association should cooperate to the fullest extent in creating a public sentiment for thoroughly prepared, adequately salaried, full-time health officers. Indeed, it should not only create such sentiment, but, as previously stated, it should take active steps to provide without delay a large share of these public servants. The production of well-qualified men for such positions is not keeping pace with the demand. Sanitation is as much a specialty as is surgery, and simply because a physician is a successful practitioner is no guarantee that he will make a qualified health officer.

Through improved medical education and the cooperation of health departments with universities, properly qualified physicians should become available to meet this growing need. It is important also that states and localities should be able to secure the services of sanitarians without reference to legal residence. It is equally as important that medical hygienists, as well as physicians generally, should be able to practice their profession anywhere within the

confines of our country without undue restriction as to academic examinations. It is not at all improbable that this thought imbued our late President in founding the National Board of Medical Examiners. This body, which promises so much benefit both to the medical profession and to the American public, stands as a monument to the industry and clarity of vision of our lamented colleague, Dr. William L. Rodman. I would commend to the Council on Medical Education the study of the problem of devising some uniform means of certifying and training prospective health officers.

The great effort of the future must be in the direction of the improvement of the internal health of the nation. We are possessed of an adequate coast defense against disease from abroad, and what we must now do is to control those diseases which are already with us. In this we require the qualified health officer and the educated public. A part of this education may be secured by the printed and the spoken word, but the great agent in public education is demonstration. This Association is in a position, touching as it does every stratum of society in this broad land of ours, to carry this work forward to ultimate fruition. This is an obligation on our profession, a sacred duty laid on the followers of the healing art. Though we minister to the sick and bind up the wounded, though we bring sight to those who see not and alleviate the suffering on the bed of pain, yet our duty is not done until we have put forth our best endeavor to the end that sickness and pain and blindness be not. Poverty and ignorance, squalor and intemperance, cruelty and greed, these are the enemies which we as individuals and as a profession must combat. As citizens who would maintain our nation in a condition of preparedness against its greatest enemy, disease, it is our duty to perform not only our legal obligations as physicians, but to bend our every energy to the prevention of disease. No selfish or half-hearted service will suffice. Nothing short of whole-souled devotion to this duty will satisfy the ideals which have been passed down to us by generations of self-sacrificing, public-spirited physicians who love their fellow men. The American Medical Association represents the crystallization of these ideals. If it permits no self-seeking interest to dominate its actions, if it maintains its plane of high altruism, if it devotes itself with strength of purpose to the betterment of the public weal, it will prosper in the future as in the past, serene and sure in the satisfaction of work well done. Let our deliberations be so imbued with that broad spirit of charity and brotherhood that the name of the physician shall be revered.

Beriberi.—Eykman, in 1897, called attention to the fact that the disease beriberi was prevalent among those rice-eating nations which partook of rice prepared in a certain way. The Bengali eats unpolished rice, that is, rice of which the red husk or pericarp has not been removed, and he does not suffer from beriberi. When the native of the Philippines pounds his rice in a large mortar with his own hands, the milled product is never so thoroughly freed of its husk as happens to that milled by machinery, and hence these natives are partly protected from the disease. A diet which is based almost exclusively on white rice causes beriberi with certainty. Eykman also found that when chickens or pigeons were fed on white rice they developed a disease similar to beriberi. General weakness, with paralysis of the legs and wings, due to a polyneuritis, developed, which could be cured by a change in diet.—Graham Lusk, The Fundamental Basis of Nutrition.

DISPENSARY ABUSE AND CERTAIN PROBLEMS OF MEDICAL PRACTICE*

J. WHITRIDGE WILLIAMS
BALTIMORE

It is with great pleasure that I preside over the one hundred and eighteenth annual meeting of the Medical and Chirurgical Faculty of Maryland, and I take this opportunity to thank my friends for the honor which they have conferred upon me. The Faculty means more to me than to many, for I was brought up in its atmosphere, and among my earliest recollections are some of the conferences held in my father's home, incident to its reconstitution after the close of the Civil War. Consequently, I esteem it a peculiar privilege to occupy the chair which my father once held, and I can assure you that in doing so I recall affectionately many of our departed members, whom some of us can visualize vividly, but who represent mere names to the majority of those present. While many of them knew less medicine than we, they strove for ideals which, if anything, were higher than ours, and it is with a sense of reverent affection that I acknowledge my obligations to many of them.

I propose to address you briefly on "Dispensary Abuse and Certain Aspects of Medical Practice," a topic which I have selected for two reasons: first, because several members of the Faculty have asked me to use my influence to check the so-called abuse; and, secondly, because my interest in medical education has caused me to consider seriously how the medical care of the poor can be best effected in the interest of the community and of the medical profession. Furthermore, an apprenticeship of several years as director of the Johns Hopkins Dispensary, and years of service as a member of the Board of Charities of Baltimore City have given me an insight into many of the problems concerned. I shall speak frankly on the subject, for, between my grandfather, father and myself, I have behind me the traditions of ninety-six years of continuous practice of medicine in this city, which should enable me to face the problem more sympathetically than a mere layman, or even than a physician who bases his conclusions solely on his own experience.

During this century Baltimore has grown from a village to a great metropolis, and the practice of medicine has undergone equally great changes.

As a boy, I remember that the only specialists in the city were a few men who devoted themselves to the treatment of diseases of the eye, and that every one else, even the surgeons, practiced general medicine, including obstetrics. At that time there were few hospitals, and they so crude that no one thought of using them, except the stranger within our gates, the friendless man and the abject pauper. Hospital fever still raged, so that the few major operations, which the surgeon thought to be indicated, were performed in the patients' homes. The few dispensaries were rudimentary and dirty, and, as their name implied, were places for the dispensing of drugs rather than for the investigation and cure of disease. I think that I am safe in stating that fifty years ago no dispensary was equipped for a thorough physical examination of its patients. Trained nurses were unknown, but "Sairey Gamps" were familiar figures, and a serious illness

* Presidential address delivered before the Medical and Chirurgical Faculty of Maryland, April 25, 1916.

was usually followed by the collapse of several female relatives of the patient who had volunteered their willing, but inefficient, nursing services. Organized charity had not been dreamed of, and the beginnings of social service were still a generation distant.

The town was small, and the physician had a patriarchal sense of obligation to his neighbors and the feeling that he was really a public servant. I know that my father and grandfather held that it was their duty to respond to any call, and to refuse to visit a poor patient from whom a fee could not be expected represented the sin which could hardly be forgiven. Up to the time of his death, my father never refused his services to such patients, and I well remember hearing it said in my boyhood that a certain man, who later attained great eminence in the profession, had a "fine line of darky practice."

With the growth of the city, the expansion of medicine, the development of specialists, and particularly with the extended organization of hospitals and dispensaries, together with the development of trained nursing and the various social agencies, all this has changed, and the old fashioned, kindly and self-sacrificing family physician has disappeared, never to return. Now, except for distinctly personal reasons, no city physician has any hesitancy in refusing to attend undesirable or unremunerative patients, but refers them to the nearest hospital or dispensary, and feels that he will give his charity the next day in the shape of a few hours of hospital or dispensary service rendered under the least onerous conditions. Doubtless the patients are better off and receive more efficient treatment than ever before, but I sometimes wonder whether our moral status is as fine as that of the old worthies who were members of the faculty before many of us were born, and whether it is well for those of us who have attained prominence in our profession to see poor patients only in the wards of the hospital.

These changes in the conditions surrounding the practice of medicine constitute one of the causes of the so-called dispensary abuse. What is the abuse? As I understand it, general practitioners living in the less prosperous sections of the city complain that a certain proportion of persons in moderate circumstances take advantage of institutional facilities, which were primarily intended for the very poor, and thus escape the payment of fees which they might otherwise earn. Again, young men who are perfecting themselves in some specialty claim that large numbers of persons are operated on without charge in hospitals or dispensaries when they could afford to pay a moderate fee.

Undoubtedly both of these conditions obtain to some extent, but in my experience they are less general than is commonly believed, and when they occur they are due less to the desire to escape the payment of fees than to the hope of obtaining better treatment. This opinion is based on the following considerations: In the first place, the prosperity of industrial workers is in general overestimated, as the great majority of married workers scarcely earn enough to support a family with the greatest economy. Scott Nearing has estimated that one half of all industrial workers in this country earn less than $600, and three quarters less than $750 per year, while less than one tenth earn as much as $1,000. In my experience, married workers who earn less than $750 a year cannot afford to make any considerable expenditure for medical services. Consequently, it becomes apparent from the figures just quoted that not more than one fourth of all industrial workers can be involved in dispensary abuse, and I believe that physicians practicing among that class of our population will testify that considerably more than that proportion make an honest attempt to pay for medical services. In the second place, I do not believe that there is much abuse among the small clerk class, as investigation will usually show when its members apply for dispensary aid that prolonged illness or financial reverses have so impaired their ability to pay that they are, temporarily at least, worse off than those who all agree are entitled to assistance. In many other instances they have exhausted their available resources in paying physicians for inferior services, and, as a last resort, go to the dispensary in search of better treatment. On the other hand, I am prepared to admit that a considerable number of patients who could afford to pay a small fee to some young specialist resort to hospitals and dispensaries for free operations.

Consequently, while it may be admitted that glaring instances of abuse are occasionally encountered, it is my experience that the greater part of the so-called abuse is due less to a desire to escape the payment of fees than to the realization that the sick frequently receive inadequate services from their physicians. This is partly the result of poor work by imperfectly educated practitioners, and is partly attributable to the increasing complexity of medical practice, in which the knowledge of one man, no matter how extensive, no longer suffices to establish a diagnosis or to lead to the rational treatment of many conditions. Who can blame a well paid worker or a clerk in modest circumstances for seeking dispensary aid after he has compared notes with less favored friends, who have utilized the services of a well organized dispensary? The former knows that he has been long treated by his physician without relief, and that all he had received for his money was to have his pulse felt, his tongue inspected and to receive a prescription; while the latter will relate that in his case a thorough physical examination had been made, the blood and urine examined, and possibly a Roentgen-ray picture taken or the stomach contents analyzed. The first man must inevitably feel that he has been neglected, while the second realizes that all of the resources of science have been utilized in the investigation of his malady. Whether his symptoms have been relieved is another matter, but until human psychology has radically changed, the result of the comparison is inevitable.

Or, to choose an example from my own work, let us take the wife of a workman whose wages are $15 a week. She is to be confined and expects to pay a fee commensurate with her circumstances. She engages her doctor, who neglects her during pregnancy, attends her at the time of labor, makes a few postpartum calls and sends his bill at the proper time. Later she compares notes with a friend whose husband's wages are $10 a week and who was attended by a well conducted outpatient obstetrical service. She is told that at the first visit to the dispensary a thorough physical and pelvic examination was made, and that a few days later a tactful nurse called at her friend's home and inquired into her conditions of life, advised her concerning the hygiene of pregnancy, and instructed her to return to the dispensary at the end of each month for inspection, advice and a urinary examination. Furthermore, she hears that three days

after failing to follow these instructions, her friend received a post card reminding her of her omission, but having postponed the visit the nurse again called, and so impressed the patient with the importance of prenatal care that each month thereafter she gladly went to the dispensary to consult the doctor. Then our woman is told that four or five weeks before the expected date of confinement her friend received another visit from the nurse, who called to ascertain whether suitable preparations had been made for the birth of the baby. She is also told that the labor was conducted by a bright young doctor, a student and a nurse, and that for the next ten days a daily visit was made by the student and the nurse. And finally, that a few days after these visits had ceased, the social service nurse called again to inquire as to the treatment she had received, and to arrange for the supervision of the baby during the following year.

When our woman has heard this recital, and has compared the treatment which her friend received for nothing with that for which she paid her physician, can she be blamed for feeling that she did not have a fair deal, and for wanting to become a dispensary patient should she become pregnant again? And are the best interests of the community served if she is prevented from so doing?

Naturally, the physician concerned will reply that the value of his services was far in excess of the fee he had received, that it is not fair for a philanthropic institution to offer services with which he cannot compete, and that it is immoral to educate patients to expect services far in excess of what their means can command. Were we concerned solely with the interests of the physician, only one reply would be possible; but, on the other hand, when the subject is approached from the point of view of the community, a different answer must be given, for no one not blinded by self interest would contend that it is not highly advantageous for all classes of the community to obtain the best possible medical and nursing care.

Accordingly, for the sake of argument, if you please, we shall admit that as dispensaries continue to improve, a larger and larger contingent of the working classes will avail themselves of their benefits, and that the question of dispensary abuse will come to be limited to those who earn more than $2.50 a day. Furthermore, the only means of limiting the more extended utilization of dispensaries will consist in hampering their development by lack of means and by the absence of idealism in the conduct of their work.

It would lead too far afield to consider critically at this time the proper organization and scope of dispensaries.[1] I cannot, however, leave the subject without briefly directing your attention to several points which I believe are fundamental to the organization and conduct of a well regulated dispensary. In the first place, it should be an integral part of a well organized general hospital, or, when that is not feasible, it should be closely affiliated with such an institution, so that all the facilities of the latter may be promptly available for the treatment of seriously sick patients. The dispensary should be provided with adequate facilities, should have a suitable nursing staff, and above all a well organized social service department; as, in my experience, the work done by the latter adds to the comfort and education of the patients quite as much as the strictly medical service. In the second place, poorly run and inadequately equipped dispensaries should not be tolerated and should not receive public support. Complaints of dispensary abuse are rarely made concerning such institutions, as they are patronized only by the most ignorant stratum of the community, do little good to their patients and lead to rapid deterioration and loss of clear thinking on the part of their medical staff. Furthermore, I feel very strongly that in order to insure a high type of medical work, even in good dispensaries, it will be necessary to pay suitable salaries to all physicians who are expected to give several hours each day to the routine care of patients. Otherwise, the work must be done by constantly changing groups of young men, who tend to become slack in interest and attendance as soon as they realize that they have mastered the details of their work.

In other words, I am pleading for the maintenance of dispensaries of the highest type, with the knowledge that the better they become, the greater will be the cry of dispensary abuse, which to my mind will not disappear until the conditions of medical practice in our large cities have undergone radical reorganization.

I can be much briefer concerning the second variety of dispensary abuse; namely, free operations on persons who can afford to pay a small fee. In my experience this class of patients frequently consult the young specialist in his office and pay a fee for his advice, but when they learn that an operation is necessary they go to a dispensary or hospital. As far as I am able to ascertain, one of two motives leads to this action: a feeling that the operation will be better and more safely done at the hospital, or a desire to escape the payment of an operative fee. In neither event should the patient be treated free, but a mechanism should be devised for the investigation of his circumstances and the charging of an equitable fee by the institution. In many cases such a fee will cover only the outlay for anesthesia, supplies, and a few days' stay in the hospital, but in other instances a balance will be left for the payment of professional services. Naturally, this balance will be so small that the operator could not accept it as a fee without a distinct loss of self-respect, so that the question arises as to its disposition. If the matter were properly handled, I feel that the aggregate of such fees would be considerable, and that such money, along with other available funds, could be utilized for the payment of moderate salaries to the members of the staff who do the work, with the understanding that the salary was in lieu of all fees from patients, except those occupying private rooms at full rates.

While such an arrangement would not put the fees into the pocket of the young specialist, who is complaining of dispensary abuse, it would do away with an unjustifiable abuse of charity and would compel the patient to pay what he could afford for operative treatment.

With the increasing complexity of medical knowledge, the development of specialists, the necessity for their cooperation in the diagnosis and treatment of many conditions, and the relatively high fees which they are compelled to charge, another serious question arises, and that is, how is the individual of moderate means, who is self-supporting and self-respecting, but who cannot afford to expend $50 to $100 in payment of specialists, to obtain the necessary diagnosis?

1. I would refer those interested in this aspect of the subject to the report on The Function of the Dispensary, which was made at the 1916 meeting of the Association of American Medical Colleges.

I believe that this will eventually be effected by the establishment of pay dispensaries, somewhat similar to the one inaugurated at the Massachusetts General Hospital in Boston on Jan. 1, 1916. In such institutions a group of thoroughly competent young men representing the various specialties will come together on certain evenings each week and will be prepared to examine such patients as may apply. The patient should be accompanied by his physician, or at least bring a letter from him asking for a report, and should not be treated except on his direct request. A fee of from $10 to $25 should be charged for the complete examination, and the dispensary staff should be compensated either by fixed salaries or by a pro rata division of the fees after a proper deduction has been made for maintenance charges.

While the suggestions which I have made may appear radical to some of you, I feel that they barely scratch the surface of the question, and even if adopted, would prove to be but temporary expedients, as I consider that our entire system of treating illness is defective and cries out for radical revision.

That something is seriously wrong becomes apparent when a man like Cabot of Boston feels it necessary to contribute to a lay magazine an article entitled "Better Doctoring for Less Money." I earnestly recommend you to read it, as I am sure, whether you agree with what is said or not, that you will admit that the author has put his finger on a sore spot and has raised questions which demand solution.

As medicine is now organized, only three classes of our population receive the best institutional care, namely, the rich, the pauper, and those who are willing to abuse medical charity; but no adequate provision is made for the care of the great middle class, which forms the self-respecting backbone of our nation. The consequence is that additional terrors have been lent to illness, more particularly when operative treatment becomes necessary for its relief. Ask any man with an income of from $1,500 to $4,000 what it cost him to be relieved of his appendix, or to have his wife treated for a complicated nervous breakdown, and you will have the question clearly set before you. Only recently a prominent banker told me that I would be surprised, did I not already know, what an appalling condition exists and what a large proportion of our self-respecting citizens are compelled to ask long-term loans in order to tide them over such emergencies. The result is that the old feeling of personal friendship for the doctor is fast disappearing, and each year an increasing number of persons come to regard him as one who is likely to take advantage of their necessities. I shall not dwell further on this aspect of the question at this time, but I shall return to it before closing.

On reverting to the question as it affects the working classes, I feel that the present system of free dispensary and hospital treatment is based on fundamentally incorrect principles. As it now is, except for a nominal charge of 10 cents for each prescription filled, the maintenance of such patients is borne by the interest on endowment funds, contributions by charitable persons, and subventions from the city and state, so that for practical purposes the recipients of such aid are as much paupers as the inmates of the poorhouse, the only difference being that the former are temporary and the latter permanent paupers. Consider, for example, the case of a workman earning $3 a day. Ordinarily he should be able to pay the necessary expenses of himself and his family. But let him have a prolonged illness; his pay stops, his small savings are soon exhausted, and he applies to the hospital for relief. He is admitted without question as a city patient, if the institution has a contract with the board of charities, and the cost of his maintenance is then borne partly by the city and partly by the institution, which in turn may be the recipient of state aid. The individual may not realize it, but he has become a pauper patient, and is the recipient of charity, just as much as the beggar on the streets.

For the year 1916 the city of Baltimore and state of Maryland are contributing $1,200,000 for the relief of suffering inhabitants of Baltimore, including the insane and those suffering from tuberculosis, while private philanthropy and charity is giving still more. Much good of course is effected by the expenditure of this money, but still larger amounts are necessary if the work is to be well done; yet a large part of it goes to pauperize patients who should in great part be able to help themselves, and this will continue to be the case until some mechanism is developed which will make it possible for the wage-earner and the small-salaried man to accumulate a reserve, during the period of productive activity, which will serve, at least in part, to defray his expenses during illness. In other words, I believe that our problem will never approach a definite solution until some form of sickness or health insurance is made compulsory on all who earn less than $1,000 or $1,200 a year.

As is well known, such insurance is in vogue in all European states, and is conducted either by the state, or at least is under its supervision. In France, Germany and Scandinavia it is voluntary and is conducted by private local societies under the strictest governmental control. In Germany the system has been in operation for over thirty years, and while nominally voluntary, is practically compulsory, and covers all persons whose income falls below $625 a year. The individual societies are designated as *Krankenkassen*, which are held in bad repute among medical men in this country on account of the difficulties which they have had with the physicians. These disputes were in great part inevitable, as the societies were originally managed entirely by laymen from the less intelligent classes, who attempted to ignore the medical profession and to pay as little as possible for its services. Latterly, however, a more liberal spirit has become manifest, so that representatives of the physicians practicing in the various communities now take part in the deliberations of the boards of control.

From what I have learned by personal inquiry in Germany, as well as from Gibbons' "Medical Benefit in Germany and Denmark," the general effect of this system is excellent, in that the medical needs of the working classes are in great part paid for by their own contributions. Moreover, another aspect of the system impressed me greatly, and that is, as the *Krankenkassen* pay, either entirely or partly, the expenses of their members while undergoing hospital treatment, the German working man regards the hospital very differently from the American, and, instead of feeling that he is there on sufferance as a pauper, considers that he is a pay patient and is entitled to great consideration. I know that it will surprise many to learn that in autocratic Germany it is not unusual for patients to complain of their treatment, and the influence of the *Krankenkasse* is such as to insure a respectful hearing, and furthermore that such patients

cannot be utilized for purposes of instruction, unless they give their consent.

In Russia and England, on the other hand, sickness insurance is compulsory, and the National Health Insurance Act, which Lloyd George forced on the latter country in 1911, is in many respects a model for such legislation, and should be read by all intelligent persons.

Under the act, which Lloyd George prefers to call health insurance, as its object is to promote the health quite as much as to provide care for the sick, all persons, with certain exceptions, in receipt of a yearly income of $800 or less must insure. During the period of insurance weekly payments of 9 pence are demanded, of which the state contributes 2 pence, while the remaining 7 pence are paid by the workman and his employer in proportions varying according to the amount of wages. When these are very small the entire contribution is paid by the employer, but when large, entirely by the workman.

The funds are handled in two ways: in great part by acceptable friendly societies, which are under strict governmental supervision; while in the case of persons who are not members of such societies, the matter is entirely in the hands of the government. It would take more time than is at my disposal to go into the details of the scheme, and I shall merely state that it provides for medical, sickness, disablement, and maternity benefits.

Naturally, we are most interested in the medical benefit, and under this the insured are guaranteed medical treatment at the physician's office, in their own homes, or in sanatoriums or hospitals, according to the exigencies of the case, together with such nursing as may be essential, and the necessary medical and surgical supplies. In each community all reputable physicians are entitled to go into the scheme, and such as agree to do so are placed on a panel and are paid according to a fixed schedule for such services as they may render. The insured may select any physician on the local panel and must retain him for a specified period of time, except for good and sufficient reasons; while the physician may refuse to accept any patient he pleases, but once having accepted him must respond to his calls until the time agreed upon has expired.

This system has been in operation too short a time to justify an authoritative verdict as to its merits, but so far as I can ascertain it has proved acceptable to the physicians, as statistics show that over nine tenths of the general practitioners are enrolled on the panels, and, as a result of doing away with gratuitous services, their average income has shown a very considerable increase.[2]

I feel that some such system must ultimately be adopted in this country, and that the question of dispensary and hospital abuse will not disappear until after it has been put into operation. Owing to our political organization, the necessary legislation must be inaugurated by the individual states, instead of being nationwide, as in Great Britain.

Of course it may be urged that legislation of this kind is socialistic, and is contrary to the individualistic tendencies characterizing American life, and could never be carried out in this country. The first objection must be granted, but it is my conviction that it is only along such lines that far reaching plans for the improvement of mankind can be carried out. The second objection, however, does not hold, as a little reflection will convince you that many socialistic or semisocialistic activities have already become engrafted on our civilization without arousing the outcry that they are un-American. Witness, for example, the beneficent effects of state care for the insane in Maryland, and the substitution of well-equipped and humanely conducted state hospitals for the county almshouses. What intelligent person would advocate a return to the old conditions? Yet the former is socialistic and the latter individualistic. Recall, moreover, the various ways in which the state and city have invaded our individual freedom for the good of the community. Think of what the state and city boards of health are doing. Would any one advocate the abolition of full-time health officers, or of attempts to control infectious diseases, or to do away with the infectious disease and tuberculosis nurses of the city health department? Medical socialism has also invaded our schools, but does any one complain that the activities of the school physicians and nurses are un-American? To my mind all of these tendencies are to be encouraged, as fostering the health and happiness of the community, and as a manifestation of the tardy recognition by the state and city of the obligations they owe to the people.

One of the most striking examples of the spread of social legislation consists in the enactment of workmen's compensation laws, which are based on the conception that loss of life and injury to the body in industrial occupations are to be reckoned just as much a part of the cost of production as the wear and tear and replacement of machinery or as the damage to wagons and mules. Up to December, 1915, thirty-one out of our forty-eight states, as well as Alaska and Hawaii, had passed such laws, which have done away with the barbarous doctrine of contributory negligence, and have provided some form of compulsory insurance in the case of injury or death, instead of the employee or his dependents being compelled to resort to the uncertain remedies of the law.

Do you know that the legislature of 1914 passed such a law for Maryland? According to this law, all employers of persons engaged in hazardous industrial work — and the definition of hazard is very broad — are compelled to insure them against accident and death. These policies, which are written either by private corporations or by the state, make provision for medical and surgical treatment; in case of permanent or partial disability, provide for the payment of half wages for specified periods of time; and in case of death, provide for funeral expenses and for the payment of either a fixed sum or an annuity to the dependents. Of course such legislation is socialistic, but what right thinking person would advocate a return to the old method of compensation only after tedious and tortuous legal procedure?

Furthermore, the legislature which has just adjourned has passed a mother's pension law, according to which all dependent widows in the state with minor children are entitled to receive from $12 to $40 each month, according to the size of their families. This legislation has not yet come into force, so that its effect cannot be anticipated, but it affords an accurate indication of the attitude of our lawmakers toward such questions.

2. Full information concerning the workings of health insurance in Great Britain may be obtained from the fourth edition (1914) of Carr, Garnett and Taylor's monumental work on National Insurance; while a short but accurate sketch is contained in the Report of the Judicial Council of the American Medical Association, published in the Bulletin for May 15, 1915.

One of the most interesting developments along these lines was the decision in 1909 of the Metropolitan Life Insurance Company to provide its industrial policy holders with free visiting nursing services during illness. Baltimore was one of the first cities in which the experiment was tried, and a contract was made with the Instructive Visiting Nursing Association to care for sick policy holders at so much per visit. This service has rapidly grown, and the company states that during the year 1914, 1,060,288 nursing visits were paid in this country and Canada at an expense of $527,861. While it is not permissible to scrutinize too closely the motives which induced the company to embark in the enterprise, it has doubtless saved much money by shortening the duration of sickness, and at the same time it has indicated an excellent method of improving the condition of the community; as the nursing service, in addition to adding to the comfort of sick policy holders, must exert a widespread educative influence.

I think, therefore, that it can be fairly claimed that the instances just adduced give a fair indication of the trend of social legislation in this country; and that I am not alone in my advocacy of some form of health insurance is shown by the fact that Dr. Alexander Lambert, in the report of the Judicial Council of the American Medical Association last year, stated that the question was not merely of academic interest, but predicted that it might at any time become a burning professional problem.

This prediction has in part come true, for in November, 1915, the social insurance committee of the American Association for Labor Legislation prepared a tentative draft of a health insurance bill to be submitted to the New York legislature, and which was also intended as a tentative model for other states contemplating such legislation. The committee consisted of ten members, and included such men as Drs. Alexander Lambert and S. S. Goldwater, and Messrs. Ed. T. Devine and I. M. Rubinow, the latter being a statistical expert and the author of numerous works on the history of social insurance. It would lead too far to attempt to discuss the provisions of this bill in detail, and I can only summarize its most important features.

The draft provided that all persons earning less than $1,200 must be insured, and recommended that one fifth of the yearly premium be borne by the state and the remainder equally divided between the employer and the employee. The committee estimated that the premium necessary to provide for the family would amount to 3 or 4 per cent. of the income, and calculated that $24 paid in behalf of a workman earning $600 a year would suffice to provide the following benefits: (1) medical, surgical and nursing benefit, (2) medical and surgical supplies, (3) hospital treatment, (4) cash benefit (two thirds of wages), (5) cash benefit to dependents, (6) maternity benefit, and (7) funeral benefits. After carefully weighing the pros and cons, the committee decided that in so large a state as New York it would probably be better to have the details administered by local approved societies, under strict state supervision, rather than by a central state organization, although it was clearly realized that the latter would present many advantages, particularly in the direction of uniform administration.

If some such system were put into effect in Maryland, I imagine that it would operate somewhat as follows in Baltimore City. In the first place, a panel of physicians would be formed, just as in England, and a schedule arranged for their compensation. The entire city would then be divided into a number of insurance districts, each comprising so many thousand insured persons. In each district there would be a thoroughly organized dispensary with a competent paid medical staff representing the various branches, adequate nursing facilities, and a social service organization. If possible it should be connected with a hospital, but if not, the necessary affiliations could be made. The dispensary should also house representatives of the various philanthropic and social agencies, and provide quarters for the local administrators of the health insurance fund, as well as for a substation of the health department. In other words, it would represent a community health center, and from it should radiate all the medical and socialized activities of the district.

The care of the patients might be organized somewhat as follows: Each insured family would be allowed to choose as its medical attendant any physician on the panel living within a certain radius. In cases of minor illness the patient would visit the physician in his office or go to the dispensary, while in more serious cases he would go to the dispensary for diagnosis or treatment. If the patient were ill in bed, he would be cared for at home by his medical attendant and a visiting nurse, or sent to the hospital if the physician deemed it advisable.

Under such a system there would be no possibility for dispensary or hospital abuse, as the expenses would be borne by the insurance fund and indirectly by those insured, no matter whether the patients were treated at home or at the dispensary or hospital. Nor would the doctor suffer. As probably two thirds of the residents of each district would be in the insured class, large numbers of physicians would be necessary for the conduct of the dispensary and hospital, and as they would be paid for such services, as well as for visiting the patients in their own homes, and would have no bad bills, they would probably consider it a matter of indifference where the patients were seen. It is my conviction that a plan conducted somewhat along these lines would result in greatly improved medical service for the insured class, and at the same time would tend to elevate the professional standard of the physicians, as they would be stimulated by constant contact with the accurate work of the dispensary and hospital, instead of feeling, as is now so often the case, that their interests are antagonistic.

This would mean that the great majority of physicians would become state officials and would devote their entire time, or at least a considerable proportion of it, to their official duties, and that the present type of medical service would be available only for the rich and for those in comfortable circumstances.

To many here present, I am sure that such a proposition appears as a Utopian socialistic dream, but I am convinced that if I live to a moderately old age I shall see some such scheme in operation. When health insurance comes to be seriously talked of in Maryland, I hope that it will be faced as a state-wide proposition, and that this faculty will do its part toward drafting satisfactory legislation; and if the law provides that the plan shall be put into effect and administered by a commission, that we shall see that it is stipulated that at least one third of its membership shall be physicians elected by this body, very much as the members of the State Board of Medical Examiners are chosen. If some

such arrangement is not made, and the administration of the law is entrusted entirely to laymen, I can foresee years of just such trouble as Germany is now recovering from. There is one other point which I regard as fundamental, and that is that in this country no plan will be acceptable which does not guarantee to the insured a reasonably free hand in the choice of the attending physician.

Such dreams may seem far removed from the solution of the problems of dispensary and hospital abuse, but until they are fulfilled, I see no prospect of checking it, but on the other hand, every probability that it will expand as the dispensaries and hospitals become more efficient and the practice of medicine more complicated.

One word more and I have done. The remedies here suggested will care for the industrial worker, the school teacher and the small clerk, while the well-to-do can take care of themselves. But what about the person in moderate circumstances, who wants to pay for what he gets, but at present finds it difficult to do so? For his ordinary illnesses he can continue to employ the present type of practitioner, for his troubles do not commence until diagnostic difficulties occur, or a surgical operation or prolonged stay in a hospital becomes necessary.

I believe that the final solution of this aspect of the problem will ultimately be found in the development of a new type of hospital, in which the substitution of cubicles for the expensive private room will make a moderate charge possible. In such institutions a mechanism should be developed by which the fees for professional services will be automatically regulated in accordance with the patient's financial standing. If this were combined with a cooperative diagnostic institute with moderate inclusive fees, sickness would lose the additional terror of financial pressure which of late years has been imposed upon it.

THE DUODENAL TUBE AS A FACTOR IN THE DIAGNOSIS AND TREATMENT OF GALLBLADDER DISEASE *

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As a rule, we can say that the nearer we get to an organ and the fluids within it, the better we can deal with it diagnostically and therapeutically. The duodenal tube has brought us to Vater's papilla. It enables us to obtain the secretions from this important source in a direct manner. It also allows us to instil fluids in its immediate vicinity and thus exert a beneficial influence on the tissues in its neighborhood.

About two years ago[1] I discussed the subject of the direct examination of the bile as an aid in diagnosis. In the present paper I intend to give my further experiences regarding this point in gallbladder diseases, and then speak on the treatment of these affections by means of the duodenal tube.

Since May, 1914, I have diagnosed probable cholecystitis by the direct examination of the bile in conjunction with the usual symptoms in forty cases. Thirteen patients with cholecystitis and allied diseases, whose bile was directly examined, were operated on. Outlined reports of the latter cases are given in the accompanying table.

Of the thirteen patients operated on, eight had stones in the biliary apparatus; one of the latter showed clear bile, while the other seven presented a turbid state of the duodenal fluid. Five of the patients operated on, with turbid bile, had no stones: two of these had malignant tumors, one of the liver, the other of the stomach and pancreas. One had tuberculous peritonitis and adhesions over the gallbladder, one chronic appendicitis, and one hour-glass contraction of the duodenum below Vater's papilla.

In the majority of cases in which turbid bile is found in the duodenum in the fasting condition, cholecystitis with gallstones is encountered. Turbid bile may, however, exist without gallbladder disease, when the liver itself is seriously diseased (neoplasms or echinococcus of the liver or high grade cirrhosis) or in stricture of the duodenum below the papilla of Vater.

On the other hand, clear bile may exceptionally be found in association with biliary calculi. There are two possibilities: Either the gallbladder is not inflamed, notwithstanding the presence of the stones, or the gallbladder is entirely filled with the calculi. In this case no bile enters the organ, and it therefore appears in the duodenum in the same state as excreted by the liver, without any admixture of the gallbladder secretions. Such occurrences, however, are rare.

In any event, the macroscopic appearance of the bile is of great import in the diagnosis of gallbladder disease or grave diseases of the liver. A clear golden yellow bile speaks well for the functions of these two organs, while a turbid, greenish or dark brown looking bile, perhaps mixed with mucus, speaks for a diseased state of either the gallbladder or liver or both. Again, in gallbladder affections the bile is liable to change in character, for its turbidity, when present, is then due to an admixture given it during its sojourn in the vesicula fellis. In permanent affections of the liver we can expect a stationary appearance of the bile, as its character is given it at the place of production.

The diagnosis of cholecystitis or cholelithiasis cannot be made from the appearance of the bile alone. The latter, however, in conjunction with the other clinical signs, will be of great assistance in establishing a correct diagnosis.

As the duodenal contents change very quickly in appearance, it is essential to examine them immediately after withdrawal. In order to preserve a specimen for demonstration or later consideration, an artificial reproduction of the sample by means of anilin dyes can be made. I use for this purpose these stock solutions: (1) yellow (MXX); (2) red (eosin); (3) naphthol green anilin; (4) nigrosin black; (5) methyl blue, and (6) French chalk and water.

A small vial is filled two thirds with clear water, and as much of the yellow to correspond with the sample to be represented is added. Thereupon is added whatever mixture is needed: red to represent a brownish tint, green to effect greenish discoloration, and French chalk to imitate turbidity. After a little practice the imitated samples will resemble more closely the real contents. These artificial samples can be kept indefinitely without change, and will bring back to memory

* Read before the American Gastro-Enterological Association, Washington, D. C., May 8, 1916.

1. Einhorn, Max: Direct Examination of the Duodenal Contents as an Aid in the Diagnosis of Gall-Bladder and Pancreatic Affections, Am. Jour. Med. Sc., October, 1914, p. 490.

the exact appearance of the original fluid, immediately after its withdrawal from the duodenum.

We now come to the use of the duodenal tube in the treatment of gallbladder lesions. In a number of patients with cholecystitis an attempt was made to instil either a weak solution of ichthyol or argyrol into the duodenum just above Vater's ampulla. This I did first in catarrhal jaundice, later also in other minor affections of the gallbladder, not requiring surgical aid. The plan of this mode of treatment is based on the idea that an astringent effect on the duodenum and the papilla of Vater will exert a beneficial effect on the bile duct. The clinical experience seems to favor this view.

The mode of treatment is carried out in the following way: The patient is given the duodenal tube either

CASES IN WHICH THE DUODENAL CONTENTS WERE EXAMINED PREVIOUS TO OPERATIVE INTERVENTION

Case	Name	Diagnosis	Examination of Duodenal Contents				Appearance of Duodenal Contents	Microscopic Examination of Duodenal Contents	Remarks
			Date	Amylopsin, mm.	Steapsin, mm.	Trypsin, mm.			
1	Mrs. L.	Icterus due to obstruction of common duct; cholelithiasis	9/21/13	8	Trace	0	Slightly reddish; no bile	.....	At operation, stone found in the common duct
			9/23/13	0	5	Trace			
2	Mr. H. D.	Cholelithiasis.....	4/27/14	15	1	2	Yellowish, turbid....	.....	Gallstones found at operation
3	Mr. H., Jr.	Cholelithiasis.....	11/27/14	6	15	20	Turbid, milky, yellow; alkaline	.....	Operated on 1/14/15; gallstones found
			1/12/15	8	2	1	Yellow, green, turbid; alkalinity = 10		
4	Mr. H. E.	Ulcus ventriculi and cholecystitis	11/28/14	4	25	3	Golden yellow, clear; alkaline	.....	Operation; gallstones found; also ulcer of the stomach
			12/ 7/14	5	18	5	Golden yellow, clear; Alkalinity = 40		
			12/10/14	4	1	0.5	Yellow, alkaline; alkalinity = 15		
5	Mr. L.	Cholelithiasis; icterus; gallbladder filled with stones and palpable	11/12/14	10	0	1	Watery, turbid; alkalinity = 55	.....	Operation; stones removed
			11/14/14	4	0	1	Greenish yellow		
			11/16/14	10	4	1.5	Yellow, turbid, neutral		
6	Mrs. P.	Icterus; obstructive jaundice; chronic pancreatitis	1/ 4/16	0	0	0	Clear, watery	Few bile stained epithelial cells	Operation; big stone found in the hepatic duct
		Postoperative biliary fistula	1/11/16	0	0	0	Turbid, dark blackish green; alkalinity = 10		
7	Mr. M.	Cholecystitis.....	1/22/16	2	0	0	Yellow, slightly turbid; alkaline	.....	Operation; tuberculous peritonitis
			1/29/16	0	0	0	Whitish; no bile; neutral		
8	Miss G.	Cholelithiasis; pancreatitis	3/28/16	0	2	1	Dark greenish yellow; turbid; alkalinity = 10	Swarming with micrococci and bacilli	Operation; enlarged gallbladder; 2 large stones; head of pancreas indurated
		Postoperative biliary fistula	4/17/16	0	2	0	Dark golden yellow; alkalinity = 35		
9	Mr. K.	Cholecystitis.....	3/14/16	8	6	6	Yellow, tinged with green; turbid; alkalinity = 10	Few cholesterin crystals, bilirubin crystals, leucin crystals, epithelial cells	Operation; tumor of left lobe of the liver
10	Mr. D.	Neoplasma ventriculi et pancreatis	9/11/13	5	3	4	Brownish green; alkalinity = 40	.....	Operation; tumor of stomach, encroaching on the pancreas
			9/13/13	8	3	2	Brownish, turbid; alkaline		
11	Mr. C.	Cholecystitis; chronic appendicitis. X-ray diagnosis: defect in pyloric region, probably cancer	4/16/15	7	2	5	Yellow, turbid; alkalinity = 75	.....	Digestive test capsule, after 29 hours, potato, eatgut, fat; trace present; thymus and nuclei partly present. Operation 4/23/15, negative; appendix removed
12	Mr. T.	Cholecystitis.....	3/28/16	4	0.5	1	Greenish yellow, cloudy; alkalinity = 45	Filled with micrococci and bacilli	Operation, 4/21/16; hour-glass contraction of duodenum below Vater's papilla
			3/30/16	10	2	4	Dark green (methyl blue); alkalinity = 50	Cercomonas hominis present	
			4/19/16	6	4	5	Dark brown, tinged with yellow green; Alkalinity = 50; rennet +	Numerous bilirubin calcium crystals; cholesterin crystals of irregular shape; few bacteria; epithelial cells	
13	Mrs. K.	.....	4/29/16	5	1	0	Light yellow, not turbid; alkalinity = 20	.....	Operation, 5/5/16; gallbladder enlarged, sausage like, containing about 150 c.c.; 25 stones found in gallbladder and cystic duct
			5/ 4/16	4	3	3	Yellow, tinge of green, turbid; alkalinity = 20		

at night before retiring, or about 5 a. m. He takes it with a glassful of water. About 8 or 9 a. m. the patient is then examined in the fasting condition, and the position of the capsule end of the tube ascertained. If found in the duodenum, the tube is slightly withdrawn (about 1 inch), so that Mark III is outside of the lips. The barrel of the syringe is now filled with a 0.25 per cent. argyrol solution (blood temperature), and the latter instilled into the duodenum by raising it. As soon as the contents disappear, the barrel is refilled with the same solution, and now the tube is pulled out about 1 or 2 inches more and the instillation repeated. From 20 to 30 c.c. of this solution may be thus injected. Ichthyol may be given in the same manner. I have used this mode of treatment every other day in a number of cases with benefit.

Among the many cases of duodenal alimentation carried out, mainly for the relief of gastric or duodenal ulcer, there were quite a number of patients (twenty) who had gallstones at the same time. (This diagnosis was made by the clinical history and symptomatology, in some by positive Roentgen findings, and in some by the passage of calculi.) The latter were benefited not only with regard to their digestive disorders but also in reference to their gallbladder condition. This occurred in a striking manner in such frequency that I feel inclined to attribute to the duodenal alimentation a decidedly beneficial influence also on the gallbladder lesion.

This might be explained by the partial rest afforded the liver in keeping the portal supply at low ebb. The improved condition of the liver, in turn, acts beneficially on its appended organ, the gallbladder.

The duodenal alimentation will, therefore, find an appropriate place in some forms of cholecystitis, particularly when complicated with ulcers of the stomach or duodenum.

ACIDOSIS IN DIABETES*

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THE ABSENCE OF A SHARP LINE OF DIVISION BETWEEN DIABETIC AND NONDIABETIC STATES

As a basis for the discussion of acidosis occurring in diabetes, I will first develop certain views regarding the points of difference between a diabetic and a nondiabetic individual and then return to the subject proper.

In the normal individual there exists a proportionality between the rate at which glucose is utilized or stored, and the rate at which it is excreted unchanged in the urine. This proportionality differs with different rates of glucose supply to the cells. When the rate at which glucose is brought into the tissues from both external and metabolic sources is below a certain minimum (expressed in terms of the weight of glucose per unit weight of tissue and unit of time), nearly all the glucose is utilized or stored, and only a trace escapes in the urine unchanged. When the rate of glucose supply to the cells (from both external and internal sources) is above this minimum, then the percentage of wastage increases rapidly; and when the rate of supply rises above some 3.5 gm. per kilogram per hour, as it can be made to do by intravenous administration, then, in a normal, well-nourished individual, from 35 to 50 per cent. may be excreted.[1] Under these conditions a normal individual is, as it were, from 35 to 50 per cent. diabetic, and he has the intense glycosuria, polyuria and thirst found in a genuine case of diabetes with a lower rate of glucose supply.

In cases of so-called "total" human diabetes there also exists a proportionality between the rate at which glucose is stored or utilized, and the rate at which it escapes in the urine; as in health, this proportionality varies with the rate of glucose supply to the cells (the grade of the diabetes and other factors remaining the same). If the rate of supply is below a certain minimum, then, as in health, most of the glucose supplied is stored or utilized, and only a trace appears in the urine.

The so-called "total" diabetic differs from the normal person only in the fact that this minimum is absolutely lower than in health. In order to reduce the rate of glucose supply to the cells below the minimum necessary to make a case of so-called "total" diabetes free from glycosuria, it is necessary to stop entirely all intake of sugar and sugar-forming elements in the form of food, and also to cut down the rate of endogenous glucose formation. This means fasting and rest with the exclusion of cold and every other influence which may stimulate metabolism. Fasting, rest and warmth, however, do not wholly stop the endogenous formation of glucose. They only decrease it. As Lusk has pointed out, during a fast, glycogen reaccumulates in dogs which have previously been deglycogenized by the use of phlorizin plus cold or epinephrin, a fact which we have several times confirmed. In these cases the glycogen comes, for the most part, from the protein metabolism which persists during fasting. Yet uncomplicated cases of "total" human diabetes become nonglycosuric during a fast in spite of this endogenous glucose supply.

Cases of severe diabetes rendered nonglycosuric by fasting, rest and warmth lose all the ordinary symptoms of diabetes, even the respiratory quotient rising to a degree which suggests some glucose utilization. This latter effect has been shown by Benedict and Joslin and by Du Bois.

It is accordingly clear that the state of every normal individual becomes diabetic when the rate of glucose supply to the cells is high enough, and every case of human diabetes passes into the nondiabetic state when it is possible to make the rate of glucose supply to the cells low enough. The difference between a "total" diabetic, so called, and a healthy person is purely relative.

ACIDOSIS IN GENERAL

Returning now to the subject of acidosis, I would emphasize the point that acidosis in diabetes occurs under the same fundamental conditions and conforms to the same general laws which pertain to acidosis in nondiabetic individuals. That particular type of acidosis which is so commonly seen in the severer cases of diabetes, the type characterized by the appearance in the blood and urine of beta-ketobutyric and beta-hydroxybutyric acids and acetone, might appear to have laws of its own and to differ specifically from the same type of acidosis when seen in nondiabetics during the course of simple fasting or one-sided diets.

* Read before the Association of American Physicians, Washington, D. C., May 8, 1916.

1. These statements are based on studies with sustained intravenous injections of sugars carried out by Sansum, Wilder and Woodyatt, 1915 and 1916. These studies are in part unpublished.

The writings of certain authors would encourage this idea, but the difference is only a matter of degree.

Our knowledge of diabetic acidosis began with Hallervorden's discovery of increased quantities of ammonia in the urine in cases of severer diabetes. Previous experimental studies by Hallervorden and Coranda having demonstrated that an increase of urinary ammonia was commonly associated with an increased excretion of acid radicals, it was suspected that this might be the case in diabetes. Following the idea that the increase of urinary ammonia might signify an increased excretion of the ammonium salts of unknown acids, Stadelman and Hallervorden proved that large quantities of alpha-crotonic acid could be distilled from acidified diabetic urine, this acid arising from the decomposition of beta-hydroxybutyric acid, as was later shown by Külz and Minkowski. It was to this condition that the term "acidosis" was first applied, and, in this paper, for the sake of convenience, the term will be used in this original sense, although it is clearly recognized that an increased production and excretion of acid radicals partly combined in the form of ammonium salts is not inevitably associated with an increased hydrogen ion concentration in the blood or with a depletion of the blood bicarbonate, because, if the body is adequately supplied with suitable bases during the course of the acidogenic process, the latter phenomena need not develop.

ORIGIN OF THE ACIDOSIS COMPOUND

It is at present common knowledge that beta-hydroxybutyric acid and its two congeners, beta-ketobutyric acid and acetone (known collectively as the "acidosis compounds" or "acidosis bodies" in accordance with Naunyn's suggestion, and less aptly as the "acetone bodies," after Geelmuyden), arise from products formed in the catabolism of fats and proteins and more specifically from certain of the lower fatty acids containing an even number of carbon atoms, in particular, perhaps, butyric acid. The chemistry of the formation of these lower fatty acids from the higher fatty acids and from certain of the amino acids, as well as the mechanism by which the lower fatty acids are converted into the acidosis compounds, cannot be discussed here.

CONDITIONS FAVORING THEIR APPEARANCE

It has long been known that one fundamental prerequisite for the accumulation in the tissues and subsequent excretion of abnormally great quantities of the acidosis compounds is a relative diminution in the rate of carbohydrate utilization. When, for any reason whatsoever, the rate at which glucose is utilized in the body falls below a certain minimum, relative to the rate of the fat and protein catabolisms, then the acidosis compounds appear in the blood and urine. It is worthy of emphasis that, when we speak of a decreased rate of carbohydrate utilization in this connection, we should have in mind specifically the catabolism of *glucose* and think, not merely of an *absolutely* decreased rate of glucose catabolism, but of a diminution *relative* to the existing rate of lower fatty acid (for example, butyric acid) oxidation.

In 1914 Zeller[2] fed patients isocaloric, nonprotein diets. He varied the proportions of fat and carbohydrate and first noted an increased output of ammonia when the proportion of carbohydrate was less than 1 part by weight to 4 parts by weight of fat. He reckoned that for the complete utilization of two molecules of the fat which he employed, at least one molecule of glucose must oxidize at the same time. Lusk suggests rereckoning these results somewhat as follows: Two molecules of fat can yield by saponification six molecules of fatty acid and two of glycerol. The two molecules of glycerol can yield in the body one molecule of glucose. Adding this to the glucose derived from the diet directly, it would appear, if we accept Zeller's results (and leave out of consideration for the moment the protein metabolism), that six molecules of higher fatty acid required for their complete oxidation the simultaneous utilization of at least two molecules of glucose. One might accordingly say: *When the mixture of metabolites oxidizing in the body contains more than three molecules of higher fatty acid to one of glucose, then the body "smokes" with acidosis compounds like an automobile with too much oil in the cylinders.* It follows that some equally definite, but not identical, relationship exists between the number of glucose molecules necessary for the complete utilization of a given number of molecules of a lower fatty acid, such as butyric acid.

ACIDOSIS IN FASTING

During a period of fasting the cells naturally continue to oxidize foods. Before the fasting begins, the proportions of fat and carbohydrate catabolized are determined roughly by the proportions of fat and carbohydrate in the diet supplied from the outside world. After fasting begins, the proportions of fat and carbohydrate catabolized must be fixed by the proportions in which these stuffs are supplied from the tissues themselves. The cells will be fed with what there is, and the proportions in which they catabolize carbohydrate and fat during starvation must therefore depend in the end on the proportions in which these stuffs have been stored. R. M. Lang[3] has confirmed these principles by direct experimental studies.

It is accordingly clear how, with respect to acidosis, fasting may produce a variety of effects in different individuals depending on how their bodies may assay for fat and glycogen at the time fasting begins, and this must depend to a large extent on the previous diet.

A person in whom there is no appreciable fat and only a trace of glycogen will necessarily during a fast subsist wholly on body protein. It is very doubtful whether this is productive of any acidosis of the type we are discussing, because from 45 to 58 per cent. of the protein is capable of conversion into glucose, and of the remaining 55 to 42 per cent., only a fraction consists of ketogenic amino acids, that is, of amino acids capable of yielding acidosis compounds. Unless something interferes with the oxidation of the glucose derivable from protein, this glucose probably suffices for the complete oxidation of the ketogenic fraction of protein. This also would seem to be verified by the experiments of Lang. On the other hand, if the body at the beginning of a fast contains a considerable glycogen reserve and also a normal amount of fat, we would expect at first no significant acidosis because there would be at first enough glycogen for the proper burning of the fat. But later, since the glycogen reserves tend to run low sooner than the fat reserves, we might expect an increasing preponderance of fat in the metabolism, and hence a rising acidosis.

2. Zeller: Arch. f. Physiol., 1914, p. 213.
3. Lang, R. M.: Biochem. Jour., 1915, ix, 456.

If the fasting were pushed until the fat reserves were also depleted, one might again anticipate a decline of the acidosis as the metabolism returned to an almost purely protein basis. Again, if the body at the beginning of a fast contained an excess of fat in proportion to the glycogen, a quicker and higher acidosis during starvation than in a strictly normal person would not seem strange. Perhaps the sudden and sharp fasting acidosis observed by Folin in the obese is due simply to the fact that these persons, thrown back on a diet consisting of their own tissue materials, find them excessively fatty. But of course it is conceivable that two bodies containing the same amount of fat might during a fast use it with different degrees of rapidity.

ACIDOSIS IN DIABETES

Acidosis develops in diabetics under exactly the same fundamental conditions which cause acidosis in nondiabetics. In diabetes, however, owing to pancreatic insufficiency, the maximum rate at which glucose can be oxidized in the body is fixed at some level which is absolutely lower than in health. The limited amount of glucose which the diabetic can oxidize per kilogram of body weight per unit of time fixes the amount of fat which he can oxidize (without developing acidosis) during the same time. He can burn only about four times as much fat as carbohydrate without developing acidosis. It therefore happens that in the severer cases of diabetes a rate of fatty acid metabolsm, which in the absolute sense is not greater than what might occur in health, becomes excessive in proportion to the amount of oxidizing glucose, and so acidosis develops.

In order to check a diabetic acidosis, it is necessary to restore the proper ratio of fatty acid to glucose oxidation by reducing the fatty acid metabolism to whatever level is fixed by the existing rate at which glucose is oxidizing. In diabetes, protein alone, if metabolized in sufficient amounts, may be productive of acidosis as well as fat, because, although protein in breaking down liberates plenty of glucose for the complete oxidation of its own ketogenic fraction, in diabetes not all of the glucose so formed can be oxidized, owing to the lessened ability of the body to split it open. Accordingly, to check a diabetic acidosis it is necessary to reduce both the protein and the fat metabolism. Fasting, rest and warmth accomplish this, and it is easy to understand how this procedure might cause a reduction of acidosis in many cases of diabetes, just as the same treatment causes a cessation of glycosuria. The fact that it commonly does so is well verified by the recent studies of Allen, Stillman and Van Slyke.

It would not be expected, however, that in diabetics, any more than in nondiabetics, fasting would always have exactly the same effect on acidosis. We should always have to consider what the previous diet of the diabetic had been and how his body would assay for fat and glycogen at the beginning of the fast, not merely the amount of glycogen (as stated by Allen in a recent quotation from the work of Landergren and Forsner), but the relative quantities of both glycogen and fat.

If the diabetic patient were emaciated and his body contained little fat, fasting would be equivalent to throwing him on almost purely protein metabolism; and unless some toxic factor maintained too high a rate of protein metabolism in spite of the fasting, we should not expect a fasting acidosis. For probably protein alone does not cause acidosis if all the glucose derived from it is oxidized, and when the absolute rate of protein metabolism sinks low enough, even the severest cases of diabetes can oxidize all the glucose that is formed from protein. This follows from what was said at the beginning of the paper. In a case recently studied by Geyelin and Du Bois, fasting caused a marked diminution of the acidosis even while the protein metabolism was relatively high and the G : N ratio in the urine was still 3.65 : 1. The fasting in this instance doubtless served to cut down the great preponderance of fatty acids in the metabolic mixture, leaving the patient more nearly on a purely protein metabolism. This case, as Geyelin and Du Bois remarked, gave evidences of a toxic (infectious) factor which served to keep up a relatively high rate of protein metabolism in spite of fasting. Hence the persistent glycosuria with some acidosis.

I have not been able to share the view expressed by some, that the lessening of diabetic acidosis during starvation is in any sense paradoxical, or to see the truth of generalities to the effect that fasting lowers acidosis in diabetics while in nondiabetics it causes acidosis. Our own experience is that diabetics have acidosis about as soon and in about the same degrees as nondiabetics *when there is reason to think that they are metabolizing similar mixtures of foodstuffs during the fasting.*

Fasting will lower acidosis either in health or in diabetes if it has the effect of stopping a one-sided metabolism and throwing the tissues on a more nearly balanced ration of fatty acids and glucose. To be sure, diabetics far and wide are much more likely to have lost a considerable part of the body fat, and so in fasting they are more frequently thrown back on an almost purely protein metabolism of low absolute magnitude. This is not a condition productive of acidosis. But normal persons in comparable states of nutrition behave in exactly the same manner. And if diabetics are very fat it may happen that fasting results in a persistence, yes even in a sharp increase of acidosis, as it does with the nondiabetic obese. In this connection it should be recalled that in every case of severe diabetes, if the patient receives any diet whatsoever, he promptly loses most of that which is already carbohydrate or which can be converted into carbohydrate in the body, and the tissues are left on what is tantamount to a purely fat diet. Fasting in the case of severe diabetes, therefore, is in effect comparable to the discontinuance in health of a heavy diet consisting wholly of fat.

In perfectly normal persons it is not possible, by the use of ordinary foods and methods of feeding, to cause excretions of acetone beta-ketobutyric and beta-hydroxybutyric acids in such amounts as may occur with similar diets in the severest forms of diabetes, even if the nondiabetics receive forced feedings consisting wholly of fat. This is due primarily to the fact that in normal persons, even on such diets, the rate of oxidation of glucose derived from body protein and from glycerol is considerable and suffices for the complete oxidation of some of the fatty acid; and secondarily, to the fact that there is a limit to the height to which the fat metabolism can be driven by fat feeding, a limit fixed by the limited rate at which fat can be absorbed from the bowel, no matter how much may be fed. Wherefore, it is impossible by fat feeding in health to

create so *wide* a discrepancy between the fatty acid and the glucose oxidation rates as that which can occur in diabetes. Nevertheless, the fat-fed person may develop a far greater surplus of fatty acids in the metabolic mixture while on a wholly fat diet than the same person will have during a fast, particularly if he happens to be a lean subject. Moreover, if the fat-fed person fasts, the acidosis diminishes or wholly disappears. This phenomenon is the equivalent of the cessation of acidosis during a fast in diabetes.

Similar comments might be made concerning the increase of the respiratory quotient. As fasting in diabetes frequently leads to a lessening or disappearance of acidosis, by cutting down the amounts of fatty acids in the metabolic mixture until even such little glucose as still smolders in the cells suffices for their complete combustion, so fasting in diabetes might be expected, under the same conditions, to cause at least *some increase of the respiratory quotient.* While the patient is being fed and the metabolism is running high with a very great preponderance of fatty acids undergoing oxidation, the absolute quantity of glucose oxidizing is too small to be recognized in the respiratory quotient by existing methods, but usually as the total metabolism drops and drops chiefly by virtue of an absolute and relative lessening of the fatty acids, the percentage of glucose in the mixture rises correspondingly. Althought the total metabolism is now low, the percentage of carbohydrate entering into it is increased, and there must be some increase of the respiratory quotient for this reason alone.

Occasionally we have encountered diabetic persons in whom the acidosis has shown anomalous variations difficult to explain in terms of the proportions of glucose and fatty acids undergoing simultaneous oxidation in the body as a whole. How are these variations to be interpreted? Dr. Howland has spoken of acidosis occurring in infants without diabetes and in spite of balanced diets. Analogous phenomena may be seen in certain types of infection in adults, notably in the so-called "milk sickness" studied by Jordan and Harris, and in some streptococcus infections, especially it seems to me in migrainic or hepatargic cases. In such instances there need be no disproportion of glucose in the diet, the acidosis may antedate the abstinence from food, and there is no proof of a disability on the part of the body as a whole to utilize glucose.

It is here interesting to consider the question of where in the body acetone, beta-ketobutyric and beta-hydroxybutyric acids are chiefly formed, and where under ordinary conditions glucose exerts its normal antiketogenic effect. There are ample experimental reasons for assuming that the greater proportions of all the acetone bodies formed in the body are created in the liver and muscle cells. The liver especially, if we may judge from perfusion experiments, seems to constitute the largest acetone factory and the principal site of the normal interaction between oxidizing fatty acids and oxidizing glucose. In such cases of acidosis we might therefore think of infections or of inherited abnormalities, or of both together, affecting particularly the liver cells and so preventing locally that reaction between oxidizing glucose and fatty acids which normally inhibits any considerable accumulation of the acidosis compounds. How such an interference might be effected is a question which would involve a detailed discussion of the nature and the mechanism of the phenomena known as "antiketogenesis." This time prohibits.

Whatever the mechanism in these cases may be, it can be assumed with safety that no person, merely because of an accident to the pancreas of such a nature that symptoms develop which justify a diagnosis of diabetes, will by virtue of this accident become immune to infections. There is accordingly reason to expect that occasionally a person who happens to have a subnormal endocrine function of the pancreas may also develop an infection of the kind mentioned, and that this may start an acidosis, or, if an acidosis is present already, augment it.

It would seem desirable in all discussions of acidosis in diabetes to make a clear distinction between true diabetogenous acidoses and nondiabetogenous acidoses occurring by accident in diabetic individuals.

104 South Michigan Avenue.

LARGE ENDOTHELIOMA OF THE DURA COMPRESSING BOTH FRONTAL LOBES *

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Neurologic literature is rich in reports of cases of tumors of one frontal lobe, but reports of involvement of both frontal lobes are rare.

CASE REPORT

F. P., woman, colored, aged 30, a domestic, admitted to Dr. Abrahamson's service of the Central Neurological Hospital, June 23, 1915, complained of severe frontal headache, blindness, difficulty in walking, weakness and incontinence. The family history and antecedent personal history were unimportant. Her habits were good. She was well up to five months previous to admission, when she began to have frontal headaches and pains in the eyeballs. These pains were constant and became progressively worse. Her vision at first was dim, and two months before entrance she became totally blind. At this time she began to vomit her food, her memory began to fail, locomotion became awkward, and just prior to admission she became incontinent. All these facts were obtained from the patient.

The patient was found on examination to be well developed and moderately well nourished. She was totally blind, and the head was bent forward, hanging loosely and at times swaying to and fro in an anteroposterior direction, that is, nodding. The temperature was 98, the pulse rate 68 with the patient standing, 60 when sitting, and the pulse was small in volume and regular. The respiration was 16 per minute and regular. The systolic blood pressure was 120, diastolic 85. The tongue was moist and coated and had a fine, regular tremor. The hands were dry. The heart, lungs, abdomen and pelvis were negative. The skull was normal.

Innervation was equally poor on both sides, and was also poor on the forehead. Deglutition, mastication and articulation were normal. The voice was nasal, and the speech whining in character. The expression of the eye was vacant, and the eyeballs were protruding and tender, both equally so. Von Graefe's sign was present, and also slight nystagmoid movements in the vertical direction. No strabismus and no ptosis were found. The pupils were widely dilated and unequal, the left smaller than the right, and there was no reaction to light or to accommodation, a case of total amauro-

* Read before the New York Academy of Medicine, Section on Neurology and Psychiatry, April 11, 1916.

sis. The ophthalmologist reported bilateral postneuritic atrophy.

Hearing was normal. There was no hydrorrhea, but there was total bilateral anosmia. The patient could not distinguish by taste between sugar, salt and vinegar, but she said strychnin was bitter, and spit it out.

The muscles of the upper extremities were flabby, with a tendency to hypotonicity. The muscles of the lower extremities were well developed with a tendency to hypotonicity. The hips, knees and ankles were spastic, both during active and passive movements. The gait was of the spastic ataxic type, the patient reeling as if drunk, but not always in the same direction. She walks with a broad base, very unsteady, and is not certain when the foot has reached the floor. That this uncertainty is not due altogether to her blindness is proved by the fact that she has the same difficulty in moving her legs when lying in bed, in spite of the fact that her postural sense is good.

Romberg's sign is markedly prominent. The plantar and knee reflexes are exaggerated and the gluteal reflexes are present.

Kernig (resistance to extension of leg or flexed thigh) and Bechterew's signs, Babinski, Oppenheim and Gordon's reflexes are absent. Abdominal reflexes present. The ankle reflexes were present and exaggerated. There was no ankle clonus and no sensory disturbances could be elicited. The mental condition of the patient should be borne in mind. There was no motor aphasia, no astereognosis (failure of tactile perception), no adiadokocinesis (failure to alternately extend and flex joints quickly and repeatedly, particularly supination and pronation).

Cerebration was slow, cohesion of ideas poor, and there was emotional instability. The patient answered questions slowly, became irritated when asked to repeat an answer, and cried and laughed without sufficient cause. When reproached by the examiner for her lack of cooperation, she answered: "I am doing the best I can." She was poorly oriented as to time, place and person. Her memory was so poor that she did not remember her present address, her husband's or her child's name. When asked to mention her birth place, she answered: "I can't keep so many things in my mind." When asked to give the names and addresses of two nearest friends or relatives, she answered: "When you are sick you have no friends."

The sleep of the patient was restless, with moaning. She was drowsy by day and dizzy.

A Wassermann test was negative. The cerebrospinal fluid was under considerable pressure, but negative both as to the Wassermann reaction and cytologically.

The patient was admitted June 23, 1915, at 3 p. m., and lumbar puncture was performed on the same day at 5 p. m. During the remainder of that day she appeared to be in a dazed condition, but took nourishment fairly well. On June 25 she got up, after having spent a very restless night, complaining bitterly of severe frontal headache and at 10 a. m. she asked to be put to bed, as she felt very weak. She ate her dinner, and died suddenly at 2:20 p. m., without having had any general or localized convulsion at any time.

From the examination and history it was evident that we had to deal with some intracranial condition, probably a rapidly growing neoplasm, most probably nonsyphilitic in nature, quite extensive in size and bilateral in character. The exact location of this neoplasm, owing to the fact that intracranial growths give a variety of distant (remote) symptoms that sometimes overshadow the direct symptoms, was not a very easy matter to determine.

To exclude the middle cranial fossa was comparatively easy. It was not so easy, however, to exclude the posterior one. Growths in this fossa usually give severe pains in the nape of the neck, yet pains in the front of the head are just as common. The position of the pain, therefore, could not be used as a localizing symptom. The symptoms of cerebellar tumors are so allied to those of frontal tumors that errors are not always avoidable.

Oppenheim found repeatedly unilateral or bilateral anosmia in cerebellar tumors, a condition due to flattening of the olfactory nerves by pressure exerted on them by the base of the brain.

One must bear in mind the relative value of early and of late symptoms of brain tumors. The vast majority of late symptoms have little focalizing value. The distortion of the brain and the marked internal hydrocephalus, occurring in the later stages of tumor, produce a variety of symptoms due only to the distortion and internal hydrocephalus, and not due to the position of the tumor. Late symptoms, however, occurring according to anatomic contiguity, may have considerable value. Stewart and Holmes long ago called attention to the fallibility of diagnosis depending on late symptoms in tumor of the brain. Anosmia, squint, particularly of the external rectus muscle, tinnitus, convulsions, general or jacksonian, are late symptoms of importance in tumors of the cerebellum, but have no definite focal significance.

The symptoms of corpus callosum tumors are bilaterality, apraxia or dyspraxia. The symptomatology depends on whether the anterior, middle or posterior portion is involved. Involvement of the anterior portion gives rise to leg, the middle to arm, and posterior portion to face symptoms. Corpus callosum tumors are also characterized by their long duration without choking of the disk, by the frequency of growth in the longitudinal sulcus, and by their extension to and even through the vault of the cranium. These tumors also give rise to jacksonian fits, which are usually bilateral, a peculiar mental state, with apathy, and the lack of harmonious interaction of both halves of the body.

Liepman has shown that a lesion situated in the right frontal lobe may cut across the path of fibers passing from the left frontal lobe, via the corpus callosum to the right arm center in the right hemisphere, without injuring the projecting fibers from that arm center to the left hand, so that we would have a left dyspraxia from a right frontal lobe lesion.

When tumors grow from the meninges or bone (extramedullary tumors) toward the brain and do not involve the brain itself, the Babinski phenomenon may be absent, and the abdominal reflexes present on the opposite side. This is particularly true if no secondary softening of the brain substance has occurred. In intramedullary conditions the reverse is true, except in postcentral tumors which do not involve the pyramidal tracts. Our case showed the absence of Babinski, preservation of the abdominals, with no sensory involvement, and thus pointed fairly definitely to an extramedullary growth.

Various attempts have been made to attribute the mental symptoms occurring in brain disease to frontal lobe involvement, but without success. It is inconceivable that such matters as the intelligence, emotions, judgment, will or self control should be localized in the frontal part of the brain. They are no more localized than the ego itself; nevertheless, it has been established that when the frontal lobes are affected, the mental symptoms are somewhat more in evidence. Almost every syndrome of psychic disease has been described by observers as characteristic of frontal lobe disease.

When one bears in mind the long duration of these tumors, the large size attained by them, the marked

internal hydrocephalus and edema of the brain, so commonly present, and the distortion of the brain, one is not surprised at the appearance of mental symptoms due to the involvement of almost the entire brain. But cases are found in the literature in which all the above factors were present, and yet mental symptoms remained in the background.

General convulsive movements and focal twitchings have frequently been noted in deep seated frontal tumors. Later, when the rolandic area or pyramidal tracts are encroached on, convulsions of jacksonian character occur along with the other convulsions. However, it must be borne in mind that jacksonian convulsions occurring late in the course of the disease have often no focal importance.

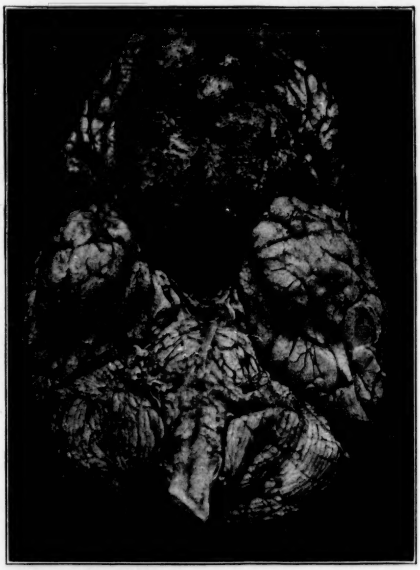
The bilateral ataxic gait could not be explained by frontal involvement, unless one were to suppose that both frontal cortices or subcortices were involved. It was best explainable as a variety of apraxia affecting both legs, the location of which is the anterior portion of the corpus callosum.

Bearing all these facts in mind, and taking into consideration the fact that in our case exophthalmos was an early symptom, and a postneuritic atrophy has resulted within a period of five months in total blindness, we thought, in the absence of symptoms pointing to cerebellar involvement, that this atrophy was one of the most important localizing symptoms, indicating some increasing direct pressure either on the entire chiasm or on both optic tracts or nerves. The important point brought out by Foster Kennedy, that tumors in the frontal region compressing the optic nerve produce a central scotoma on the side of the tumor and a papilledema on the other side, could not be utilized as a diagnostic point, the patient at the time we saw her being totally blind. We thought it improbable, if not impossible, that such rapidly onsetting blindness could be a nonfocal symptom, and this, with total bilateral anosmia, and ataxia of the legs, justified a tentative diagnosis of involvement of either both frontal lobes or a neoplasm between them, compressing both the olfactory and optic tracts and nerves. The absence of a Babinski and the presence of the abdominals were not at this time easy to explain, but were suggestive of an extramedullary growth.

The pathologist's report of the necropsy, which was confined to the head, is as follows:

The brain measured 17 by 12 by 9 cm., and with the exception of the tumor mass and the depression at the point of its attachment, appeared normal. The weight was not determined.

There was a median depression measuring 7 by 6.5 by 5 cm. which involved the inferior surface of both frontal lobes. The surface was concave and smooth, the convolutions and sulci being obliterated. The circle of Willis was enlarged, but complete, the anterior cerebral and anterior communicating arteries in normal position, the former elongated, due to displacement backward of the posterior cerebral, with consequent lengthening of the posterior communicating artery. The optic chiasm was displaced backward, being 10.5 cm. from the anterior margin of the frontal lobe, the normal distance being from 7½ to 8 cm. Lying within this depression was a globular mass 7 by 6.5 by 5 cm., the surface of which was irregularly roughened, showing numerous slight elevations, some of which were circular in outline and others irregular, and which measured from 2 mm. to 1 cm. in diameter. The tumor was attached to the dura mater in the center of the olivary process of the sphenoid for a distance of one fourth of an inch and connected with the brain by a few vascular strands.



Base of brain, showing displacement of medulla, and the tumor pushing the thinned-out frontal lobes apart. Dark line within the tumor is portion from which section was made for microscopic examination.

Microscopically, the tumor cell was elongated and spindle shaped, containing much protoplasm and an egg-shaped or rod-like vesicular nucleus filled with minute chromatin granulations. The cells were arranged in irregular, twisting strands or in concentric whorls typical of the endotheliomas of the brain membranes. The tumor had a slender, cellular connective tissue framework, which contained an abundant supply of thin-walled blood vessels.

The diagnosis was endothelioma.

It was unfortunate that the patient's early death deprived us of sufficient opportunity to study the case further, and that no Roentgen-ray examination could be made.

After studying the postmortem brain many of the symptoms obscure at first became clear. Evidently the peculiar gait and the leg apraxia were due to involvement of the corpus callosum. The conclusion that because of the absence of the Babinski sign and the preservation of the abdominal reflex the growth was extramedullary was correct.

The specimen further showed that the duration of the disease was much longer than that given by the patient in her history, because it is a well-known fact that frontal tumors may exist a very long time, and that in this situation they may attain a considerable size without giving the slightest focal symptoms.

264 Seventh Street.

Time for Rest.—There should be hours for necessities, not for delights; times to repair our nature with comforting repose, and not for us to waste these times.—Shakespeare.

TRENCH FOOT TETANUS

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It is the purpose of this paper to report a case of tetanus, occurring as a complication of "trench foot,"

Fig. 1.—Superficial abrasions on instep and dorsum of feet and blackening of toes (gangrene) in case of trench foot in which tetanus developed. The discoloration of the feet up to the malleoli is due to the application of picric acid. Patient died.

and to emphasize the importance of an early prophylactic dose of antitetanic serum in this type of case.

In using the term "trench foot" we refer to the lesion of the feet which has occurred so frequently in soldiers in the trenches during the cold and rainy weather. In the milder cases the feet present no obvious changes, but anesthesia of the functional type is present, or the feet are edematous and definite organic sensory changes can be detected. In more severe cases marked cyanosis, gross edema, bleb formation and serious organic sensory changes are present. In the worst cases, dry gangrene of the frost-bite type develops, leading to the death of considerable areas of skin, the loss of one or more toes, or massive gangrene of the feet, even extending to the lower third of the leg.

The facts of interest in our case are as follows:

REPORT OF CASE

Rifleman E. C., No. 34,946, Company D of the Twelfth Rifle Brigade, aged 20, entered this hospital with the diagnosis of "trench foot," Feb. 18, 1916. About February 2 the patient was with his regiment in the trenches near Ypres for five days, during which time he was exposed to the cold and his feet were wet almost constantly, and during the period of five days he changed his socks only twice. Then for four days after this he was cut off by the Germans from the rest of his regiment and did not have his shoes off at all during this time. He was not wounded and gave no history of injury. He remained four days at the casualty clearing station and then was brought here. He had no pain in his feet but complained of being unable to go to sleep.

On entrance, February 18, the patient had a temperature of 102.4, pulse 120, and respiration 24 per minute. The face was rather flushed, and the pupils were equal and reacted equally to light and accommodation. Heart and lungs were negative except for the rather rapid rate and a few râles at the base. The patient was rather restless, especially at night. Both feet were reddened and edematous, which condition extended well up over both ankles, higher on the left leg, where it extended 6 cm. above the internal malleolus and 4 cm. above the external malleolus. The great toe of the right foot was slightly blackened on the dorsal and inner side, and all the toes were more or less cyanotic. Anesthesia was present over all the surfaces of both feet, and extended up on both legs about 2 cm. Above the anesthetic area was a hyperemic zone, and above this again was a zone of hyperesthesia. Over the dorsum of both feet the edema was most marked, and hemorrhagic blebs were present over both insteps. Large but superficial fissures were present over the middle of the plantar surfaces of both feet. February 22, it was noted that the third, fourth and fifth toes of the right foot, and the great toe of the left foot, became extremely cyanotic, and that insomnia and restlessness continued.

February 25, the patient noticed stiffening of the jaw muscles, and 2,000 units of antitetanic serum were given. February 26 the jaws were tightly set, and there were slight twitchings of the muscles of the lower extremities. The patient caught his tongue between his teeth and slightly injured it. There were occasional clonic spasms of the muscles of the back of the neck. All toes were now noted to be gangrenous, and 10,000 units of antitetanic serum were given intravenously. February 27, the respiratory muscles became involved, and opisthotonos became more pronounced, and the spasms more frequent and had to be controlled by chloral and chloroform. The patient died, February 28.

Immediately after death cultures were made from the tissue from three places in each foot, the gangrenous great toe, the instep where the blebs were, and from fissures on the sole of the foot. All six cultures gave the tetanus organism.

COMMENT

This patient had not had a prophylactic dose of antitetanic serum. It has not been the practice to give it in trench feet cases. In all cases in which the patient

Fig. 2.—Superficial abrasions on soles of feet and blackening of toes (gangrene) in case of trench foot in which tetanus developed.

has been wounded, it is the custom to give a prophylactic dose of 500 units at the front. The value of this procedure can be estimated by observation of patients who have passed through this hospital.

Out of a large number (statistics are not popular at the present writing) of sick and wounded which have passed through this hospital in the last nine months, there have been only eight cases of tetanus, and only in

two cases did tetanus develop when the prophylactic dose had been given.

In considering the fatal outcome of this case of trench foot tetanus, in which a prophylactic dose of antitetanic serum had not been given, and in view of the excellent results obtained by prophylactic doses in the wounded, the conclusion is that it would be a reasonable rule in military surgery to consider all cases of trench feet as in a class with the wounded, and give these patients also a prophylactic dose of antitetanic serum.

EARLY DEATH FROM CEREBRAL SYPHILIS, WITH SUCCESSFUL RABBIT INOCULATION

REPORT OF A CASE *

MATHEW A. REASONER, M.D.
Captain, Medical Corps, U. S. Army
WASHINGTON, D. C.

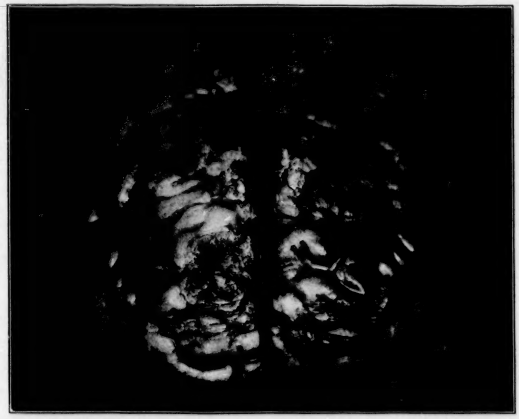
History.—Mr. X., aged 30, after intercourse Jan. 1, 1915, had a large indurated lesion on the penis about Feb. 13, 1915. On the request of his physician, Dr. Victor H. Esch of this city, I made a dark-field examination Feb. 27, 1915. The examination was negative, probably due to the prior use of calomel powder. The Wassermann reaction showed complete fixation.

Between February 27 and June 1, 1915, the patient received two intravenous injections of 0.9 gm. neosalvarsan and twenty-four intramuscular injections of salicylate of mercury. Wassermann tests made on June 2, 7 and 8 were all negative. The patient now believed himself cured and stopped treatment, despite the advice of his physician to the contrary.

During August, 1915, he developed severe headaches, which were more acute at night. He had several attacks of vomiting. He also had two convulsions, during which he lost consciousness. He described the headaches as being so severe that he felt impelled to strike his head against the wall to relieve the pain.

About September 1 he returned to his physician, who at once began the use of inunctions of mercury. I saw the patient in consultation on September 7, at which time a lumbar puncture was performed. Examination of the spinal fluid gave the following results: globulin + +, Lange colloidal gold test, 2-3-3-2-1-0-0-0-0-0, cells 184, Wassermann, complete fixation in 0.5, 0.3 and 0.1 c.cm. quantities. The blood Wassermann reaction also showed complete fixation. I believe good judgment was shown in starting the treatment on September 1, with mercury. In cases of nervous involvement, it seems to me that there is less danger from a Herxheimer reaction, following the use of salvarsan, if there has been some preliminary mercurial treatment. At this time, on the request of Dr. Esch, the patient was transferred to my care. The following day, September 8, he was given an intravenous injection of 0.3 gm. salvarsan, without untoward manifestations resulting. His headaches ceased within twenty-four hours; but again he neglected continuous treatment. He returned at the end of two weeks with his headaches as severe as before and with a history of having had several convulsions. He was at once given another 0.3 gm. salvarsan injection intravenously, and the inunctions and injections of mercury were resumed. The mercury was given to the limit of toleration, and again his symptoms rapidly subsided. He had three or four convulsions during the first two weeks, and after that seemed to be doing quite well. His mental condition improved, though he still remained somewhat forgetful and apathetic. He gained 8 pounds in weight and returned to work. The patient objected both to another lumbar puncture and to intraspinal medication, which seemed advisable, but, due to his apparent general improvement, this was not insisted on. The patient, however, agreed to have this done later if necessary. At no time were there localizing manifestations or disturbances of vision or hearing. At the end of six weeks, the Wassermann reaction still showed complete fixation.

On the night of Nov. 18, 1915, he developed a series of epileptiform convulsions. He did not regain consciousness and died at the end of about six hours.



Photograph of brain showing lesion.

Postmortem Examination.—The postmortem was performed by Dr. William H. Hough after embalming. The brain was moderately congested, but there was no flattening of convolutions. There was slight opacity of the arachnoid membrane over the anterior half of brain, more noticeable over the rolandic area. The base showed no abnormalities. The only gross lesion manifest was located, as will be noted in the illustration, in the anterior portion of the convex surface of the right frontal lobe and was about 3.5 cm. in diameter. Firm adhesions existed between the lesion and the overlying dura. The ventricles, as well as the choroid plexus, were apparently normal. On section, the lesion was seen extending through the cortex to the medullary substance and appeared as a grayish-red discoloration. Sections examined were from the lesion, rolandic area, normal frontal, occipital, cerebellum and hippocampus. Microscopic examination of the lesion showed several small gummas in the pia and extending into the cortex, with the presence of many newly formed blood vessels and endothelial proliferation and thickening of the walls of the older vessels, some of these vessels being apparently thrombosed. The pia-arachnoid showed in places marked round cell production and new blood vessel formation, and many of the blood vessels of the cortical portion showed circumscribed round cell infiltration. One spirochete was found in Levaditi section. Microscopic examination of other parts of the brain was negative except for slight evidences of meningeal inflammation (endothelial proliferation, thickening of blood vessel walls and some round cell production) noticed over the rolandic area.

Here, then, is the interesting condition of a man whose death was due to cerebral syphilis, ten and one-

* From the Department of Pathology, Army Medical School, Washington, D. C.
* Presented before the District Medical Society, Washington, D. C., Jan. 19, 1916.

half months from the date of infection. He was treated adequately during the first three and one-half months, and received intensive mercurial treatment and two salvarsan injections during the last two months. He presented no signs of spinal irritation, special sense involvement, or other localizing manifestations. His only gross lesion has been described.

The spinal fluid in this case contained the *Spirochaeta pallida* as was shown by injection into the testicles of a rabbit. If there be such a thing as a highly invasive strain or one having a predilection for the nervous system, any characteristics peculiar to such a strain should be manifest in this one. Two other cases, in which infection was contracted from the same source, are now being followed. The results of the study of this strain in the rabbit will be published later in conjunction with the findings from a number of other strains, obtained from various sources. It is interesting to note that this strain shows the same tendency toward eye involvement in the rabbit, noted by Nichols[1] in the Nichols and Hough strain, obtained from the spinal fluid of a neurorecidiv.

AN UNUSUAL STOMACH CASE

WITH ROENTGENOGRAPHIC FINDINGS

GEORGE E. BROWN, M.D.
MILES CITY, MONT.

History.—G. R., woman, aged 29, came to my office with a history of chronic stomach trouble dating back fifteen years. Family history was negative. Personal history contained nothing of importance except the excessive use of beer and cigarets. There was no history or evidence of syphilis. The patient had noticed the present stomach trouble for fifteen years, consisting of attacks of epigastric pain and vomiting. The pain was of the burning type without relation to meals, nor was relief obtained by food. Excessive belching and regurgitation of food were also present at times. The vomiting took place directly after meals and twice was pure blood. One year ago, fainting followed the vomiting of a large amount of fresh blood. The patient was examined by prominent surgeons in the Middle West eleven years ago, and the condition diagnosed as gastric ulcer. Six months ago, the patient had an acute attack of appendicitis, and the appendix was removed by another physican. This was actively inflamed, according to her statement, but its removal had no influence on the gastric symptoms.

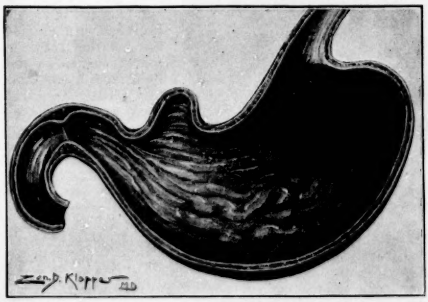


Fig. 1.—Artist's drawing, showing pouch involving all coats of stomach; no spasm was present when stomach was explored.

Examination.—Physical findings were negative. There was no abdominal tenderness. Gastric findings: Lavage was bloody after a test meal; the meal also contained red blood. Total acid was 40, and free hydrochloric acid 20. At a second examination, total acidity was 67, free, 45. There was an excess of mucus, and microscopic examination showed a few yeast cells, many diplococci and staphylococci. The stools gave a positive benzidin test for occult blood. The urine was negative.

Fig. 2.—Roentgenogram of pouch; on fluoroscopic examination, a more oblique view brought the pouch into greater prominence. Print retouched.

Roentgenoscopy.—The stomach was high in the abdomen; there was no incisura; peristalsis was normal. The duodenum and pylorus were negative. On the lesser curvature was seen a projection which was quite marked. This shadow was permanent, and peristalsis on the lesser curvature seemed to commence on the pyloric side of the mass which did not partake of any peristaltic wave, while on the greater curvature waves started at the usual site. There was no marked tenderness over this area. There was no 6 hour residue. The stomach was freely movable. The patient was reexamined two weeks later with similar findings regarding the mass on the lesser curvature. A series of six plates showed this very distinctly and constantly.

Operation.—The diagnosis was in doubt. We decided that gastric ulcer was the most logical diagnosis, and as her condition was unsatisfactory on medical treatment, an exploratory operation was done by my associate, Dr. W. H. Buskirk. I will report his operative notes verbatum: "Median epigastric incision, stomach delivered into wound. No external signs of ulcer. On lesser curvature a small outpouching of stomach wall was found, corresponding to deformity shown in x-ray plates. This was about the size of an English walnut, and resembled a hernialike weakening of the stomach wall. No evidence of ulcer near this pouch. A transgastric incision 1½ inches long made into stomach, and interior carefully explored. No ulcer nor growth found. Mucous membrane bleeds with most gentle handling. Pylorus admits index finger. Duodenum negative. Stomach incision closed. The hernia on lesser curvature plicated with three linen sutures."

Postoperative Course.—The patient made a rapid and uneventful recovery and left the hospital in ten days, feeling fine. She was seen at varying intervals in the following

1. Nichols, H. J., and Hough, W. H.: Demonstration of Spirochaeta Pallida in the Cerebrospinal Fluid, The Journal A. M. A., Jan. 11, 1913, p. 108.

year, and was much improved; but an indiscretion in diet or an excess of alcohol would bring on many of her original symptoms, as it was impossible to control her habits and mode of living.

COMMENT

This case is of interest not alone because of its clinical rarity, but also from the fact that the roentgenologic findings were deceptive. The mass on the lesser curvature resembled the roentgenologic picture of penetrating ulcer, though no incisura was present.

The clinical findings were also deceptive, namely, hematemesis, occult blood in stools, gastric pain and vomiting.

I can find no mention of any similar condition in the textbooks, though I have not made an exhaustive search of the literature.

The diverticulum was very pronounced, when the stomach was examined. The examining finger of the surgeon could be inserted into this pouch, which was apparently a hernia of the stomach wall.

FECAL CONCRETIONS OF THE APPENDIX

DEMONSTRABLE BY THE ROENTGEN RAY *

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AND
LEON THEODORE LE WALD, M.D.
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Concretions in the appendix, formed, as they are, of hardened, more or less inspissated fecal matter, are rarely opaque to the Roentgen ray, and are therefore usually not demonstrated by roentgenographic examination. If bismuth or barium has been previously given for gastro-enterologic examination, a persistent residue in the appendix may sometimes be due to the coating of the concretion with the opaque substance.

When, however, owing to the inflammatory reaction of the tissues, calcium salts are deposited on the surface of the fecalith, it may become demonstrable. The condition is similar to that which occurs in cholelithiasis. Gallstones forming as a result of pure cholesterin precipitation cause no shadow. Those in which infection and resulting inflammation of the gallbladder have caused a deposit of calcium salts to coat or become mixed with the cholesterin become opaque.

The following two cases are reported to show the possibility of such a fecalith being mistaken in a roentgenogram for a ureteral calculus on the right side, unless the roentgenogram is taken with opaque ureteral catheters in the ureters. One case from the literature, however, and one case from a personal communication, show that even this is not an infallible means of differential diagnosis.

CASE 1.—A man, C., aged 21, a painter, became ill three weeks before admission to the hospital, with pains in the right iliac region, vomiting and fever. The attack lasted five days. Pain gradually disappeared, but reappeared two days later in the same spot and persisted up to his admission to the hospital. There was no further vomiting or temperature elevation, his appetite was fair, and his bowels had been irregular. On admission his temperature and pulse were normal. The leukocyte count was 15,500 with 78 per cent. of polymorphonuclear cells; on the following day the leukocyte count fell to 10,000, with 66 per cent. of polymorphonuclears.

Physical examination demonstrated slight rigidity and tenderness in the lower part of the right inguinal region, but no mass could be felt. On rectal examination a sense of resistance was felt in the right side of the pelvis above the prostate, and a slight mucopurulent discharge from the rectum was present.

Roentgenographic examination showed a shadow in the right side of the pelvis (Figs. 1 and 2), and a diagnosis of acute appendicitis with abscess which had probably perforated into the rectum was made. The shadow was believed to be a fecalith.

On operation it was found that the appendix had sloughed off about 1 cm. from its base, and a fecalith about 2 by 1.5 cm. in diameter was found in a cavity below the cecum between the rectal wall and the right pelvic wall. It appeared as if the fecalith might have been formed by leakage from the appendix stump, which was still patent.

CASE 2.—W. T., aged 23, was admitted to St. Luke's Hospital with a history of acute appendicitis of three days' duration. Temperature on admission was 102.8; pulse, 128.

Fig. 1.—Arrows point to shadow in the region of the appendix diagnosed as fecalith by Roentgen examination; diagnosis confirmed at operation. For appearance of fecalith after removal see Figure 3.

Physical examination revealed an indefinite mass in the right lower quadrant with marked rigidity and tenderness over the whole abdomen. No Roentgen examination was made.

On operation a gangrenous appendix was found which had perforated but still contained a large, hard fecalith. A spreading peritonitis was present.

The concretion was so hard that it prompted the idea of testing its density in comparison with the concretion from CASE 1 and that of two ureteral calculi which had been demonstrated by roentgenographic examination before removal from other patients. The result, illustrated in Figure 3, showed that this also would certainly have appeared on a roentgenographic plate.

Pfahler and Stamm[1] state that "only one case has been diagnosed before operation. This was discovered accidentally by Weisflog in 1906 who, while searching for a ureteral stone by means of the Roentgen ray,

* Read before the Surgical Section of the New York Academy of Medicine, April 7, 1916.

1. Pfahler and Stamm: Diagnosis of Enteroliths by Means of the Roentgen Ray, Surg., Gynec. and Obst., 1915, xxi, 14.

found two stones in the appendix." They report two other cases, one of an enterolith in the cecum, the other of two fecaliths in the appendix.

In addition to these reports, isolated cases have been reported within the last few months. Hunner[2] of Johns Hopkins reported a case of fecalith of the appendix demonstrated by the Roentgen ray but diagnosed as a probable ureteral calculus, although the

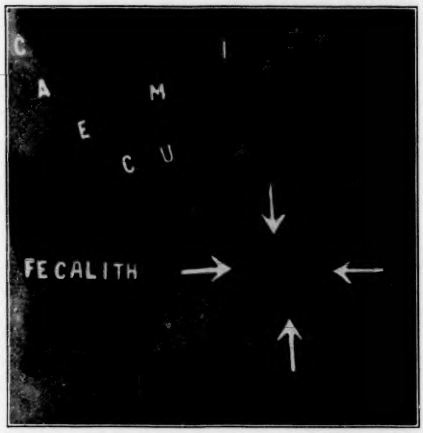

Fig. 2.—Arrows point to shadow in the region of the appendix diagnosed as fecalith by Roentgen examination; exposure made six hours after opaque meal; diagnosis confirmed at operation. For appearance of fecalith after removal see Figure 3. I, ileum.

possibility of its being in the appendix was stated. Stewart[3] reported a case in which a shadow in the right inguinal region was diagnosed as a possible concretion of the appendix, and at the operation it proved to be such, and had apparently escaped from a ruptured gangrenous appendix.

Case[4] reported two cases in which a concretion in the appendix had been correctly diagnosed by Roentgen examination and afterward confirmed at operation.

Seelig[5] reported a case in which the history, physical signs, ureteral catheterization and Roentgen examination all indicated ureteral calculus, but on operation none was found. The obstruction in the ureter was caused by a subacutely inflamed appendix being adherent in front of the ureter, and the shadow in the roentgenogram was due to a fecal concretion in the appendix.

Eastmond[6] reported a case almost identical with that of Seelig:

> The patient, man, aged 38, had several attacks of pain high up on the right side. Roentgen examination showed a shadow just above the transverse process of the third lumbar vertebra on the right side about the outer margin of the psoas muscle. Exposure made with the opaque catheter in the ureter showed an apparent obstruction at the point of the suspicious shadow and close approximation of the catheter and the shadow, so that the suspicious shadow was believed to represent a stone in the ureter. At operation, an anterior incision having been made, the appendix was found with its tip firmly adherent to the ureter and compressing it, causing obstruction. The tip of the appendix contained a concretion which accounted for the shadow noticed in the roentgenogram. The concretion was oval with its longest diameter vertical, so that this very much simulated a ureteral calculus.
>
> On removal of the appendix, a catheter passed up from the bladder showed the ureter free.

It would appear, therefore, that in a small number of instances a fecalith of the appendix may be demonstrated by roentgenographic examination, and that this fact must be taken into consideration when making a diagnosis.

Usually the passage of opaque ureteral catheters will be of the greatest assistance in differential diagnosis, but the two cases reported by Eastmond and Seelig demonstrate that even with this assistance a mistake may be made.

As a further aid in Roentgen diagnosis, we would suggest that when the shadow is above the crests of the iliac bones, a *lateral* stereoscopic roentgenographic examination be made, preferably with an opaque catheter in the ureter on the suspected side. In a case recently examined in this way we were able to distinguish what is probably a calcified lymph node from a supposed ureteral calculus.

If there is still doubt, a Roentgen examination, combined with an opaque meal or enema, may show the relationship of the suspicious shadow to the appendix or cecum, as in Case 1 (Fig. 2).

Finally, we would call attention to the possibility of one encountering a left sided appendix due either to a nonrotation of the colon or to a complete transposition of all the viscera. One of us (Le Wald) has encountered the former condition in three persons, and the latter condition in twelve. A shadow on the left side, therefore, may represent a calculus in the appendix unless a Roentgen examination shows the cecum on the right side.[7]

51 West Fifty-Fourth Street — 99 Claremont Avenue.

Fig. 3.—Roentgenogram of four bodies of about equal density, two from the appendix and two from the ureter: 1, an appendix concretion in a case of acute gangrenous appendicitis; 2, ureteral calculus; 3, concretion from the appendix diagnosed by Roentgen examination as a concretion prior to operation; 4, ureteral calculus. Exact size.

2. Hunner: At a meeting of the Genito-Urinary Section of the New York Academy of Medicine, Jan. 19, 1916.
3. Stewart: At a meeting of roentgenologists at Atlantic City, Jan. 22, 1916.
4. Case: At a meeting of roentgenologists at Detroit, Feb. 5, 1916.
5. Seelig: Surg., Gynec. and Obst., 1908, vii, 485.
6. Eastmond, Charles: At the meeting of the New York Roentgen Ray Society, Feb. 21, 1916.

7. Since the preparation of this article for publication, a third case has come under our care. D. F., a girl, 2 years of age, was referred to St. Luke's Hospital by Dr. J. F. Bell of Englewood, N. J., with a diagnosis of acute appendicitis. A Roentgen examination made for the purpose of excluding the possibility of a right side central pneumonia (two previous cases of this nature having come under our observation) disclosed a shadow in the appendix region and no pneumonia. Operation revealed an acutely inflamed, gangrenous appendix containing a concretion corresponding in size to the shadow on the Roentgen plate. Roentgen examination of the removed appendix further confirmed the identity of the shadow.

New Instruments and Suggestions

A SIMPLIFIED METHOD OF ADMINISTERING SALVARSAN

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Senior Assistant in the Department of Skin and Syphilis, Bobbs and City Dispensary

For eighteen months I have been administering salvarsan intravenously by the means of a 30 c.c. syringe. The manufacturers of this product have always advised that larger amounts of water be used (250 c.c. for 0.5 gm.). I have no hesitancy in giving 0.6 gm. in 30 c.c. of water. The results obtained have been so consistently successful that I think a description of the method employed not amiss.

In the directions for giving neosalvarsan it is advised that the drug (0.9 gm.) be given in 150 c.c. of water. In connection with my associates in the Bobbs and City Dispensary, I have given 3,000 injections of neosalvarsan (0.9 gm.) in 10 c.c. of water, using an ordinary glass syringe. The number of reactions was much less in this series of cases than when the gravity method was used and the solution was made up to 150 c.c., owing to the fact that the so-called "water-faults" were eliminated. I am confident that the same holds true for salvarsan.

The apparatus necessary for preparing the solution and administering the injection is very simple, as shown by the illustration:

1. One 30 c.c. Lüer syringe with needle.
2. One glass-stoppered 60 c.c. shaking bottle.
3. One bottle of 15 per cent. sodium hydroxid with medicine dropper.
4. One 50 c.c. funnel.

TECHNIC

The apparatus is sterilized by boiling in freshly distilled water in an 8 inch aluminum pan. The shaking bottle containing approximately 30 c.c. of boiling water is removed from the pan, and the salvarsan is added. It is then shaken until a clear solution is obtained. Glass beads in the shaking bottle facilitate the preparation of the solution. Fifteen per cent. sodium hydroxid is added until the precipitate which at first forms is dissolved. The solution is then filtered through a pledget of sterile cotton in the funnel directly into the barrel of the syringe. The plunger of the syringe is inserted and the needle attached. The air is expressed from the syringe, and the solution is then ready for injection. The procedure is the same as for any intravenous injection in which a syringe is used. Any all-glass syringe is suitable.

The accompanying tabulations of 604 injections show the reactions obtained.

These tables show that seventeen reactions were observed classed as slight. In the true sense of the word, they should not be classed as salvarsan reactions, but as psychic manifestations due to fright, etc. All patients who have complained of a "sense of fulness" in the face, slight dizziness, or "funny sensations" are recorded under this heading.

TABLE 1.—PRIMARY STAGE, FORTY-SIX PATIENTS

Dose, Gm.	Number of Injections	Reaction*			
		Slight	Moderate	Severe	None
0.4	154	4	3	...	149
0.6	36	1	2	...	31

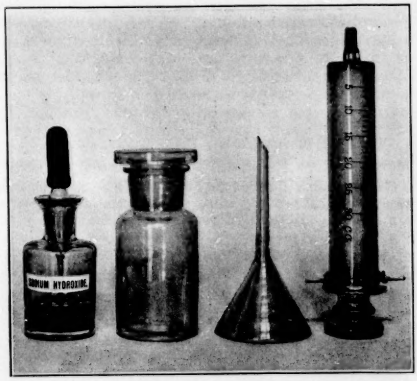
TABLE 2.—SECONDARY STAGE, FORTY-FOUR PATIENTS

Dose, Gm.	Number of Injections	Reaction*			
		Slight	Moderate	Severe	None
0.4	190	6	5	...	179
0.6	36	1	2	...	33

TABLE 3.—TERTIARY STAGE, FORTY PATIENTS

Dose, Gm.	Number of Injections	Reaction*			
		Slight	Moderate	Severe	None
0.4	178	4	5	...	169
0.6	10	1	...	...	9

* By "slight reaction" is meant flushing of face, nervousness, and slight acceleration of pulse lasting only a few minutes. By "moderate reaction" is meant headache, chills, fever and pain lasting not over four hours. By "severe reaction" is meant headache, chills, fever, vomiting, diarrhea, vasomotor disturbances and collapse.



Apparatus used for administering salvarsan with a 30 c.c. syringe.

In seventeen instances, moderate reactions are recorded. None of these lasted over four hours, and the majority not over two hours.

In 570 injections, no reactions were observed.

ADVANTAGES

The chief advantages of this method are:

1. Time and labor are saved. The apparatus can be sterilized, the solution prepared, and the injection given in seven or eight minutes. This is especially desirable in dispensary practice where the time is limited and several injections must be given. There is no complicated and cumbersome apparatus to be sterilized. The solution may be administered in thirty or forty seconds with the syringe, whereas with the gravity apparatus it often takes from twelve to fifteen minutes for the solution to run through the needle, which must of necessity be of small caliber in some cases.

2. The method is less dangerous than the gravity method. In the latter an untrained and inexperienced operator is not always certain that he has entered a vein, nor does he know when the needle has slipped from or pierced through the vein during the procedure. When using the syringe, if he is at any time in doubt, he may readily assure himself that the injection is moving properly by pulling back the piston and noticing the return of blood into the glass tip of the barrel of the syringe. Further, there is no danger of air entering the vein.

3. The number of salvarsan reactions is less than when larger amounts of water are used. The greater the dilution, the greater will be the number and severity of reactions due to the so-called "water faults." In 30 c.c., "water faults" are practically eliminated.

4. By using this technic, the giving of salvarsan becomes a one-man operation.

ADDENDUM

Since writing this paper, I have given to sixty-five patients a series of 342 injections of arsenobenzol, the arsenic com-

pound prepared by the Dermatological Research Laboratories of the Philadelphia Polyclinic under the direction of Dr. Jay F. Schamberg. The 0.4 gm. dosage was used in the 30 c.c. dilution, and the injection given with a syringe in all cases. In no one of these patients has there been a reaction of note. Seven of these patients following the injection at varying intervals of from one to four hours have complained of headaches which might or might not have been due directly to the administration of the drug. Clinical results accomplished by the use of arsenobenzol have been equally as good as the results obtained from the use of salvarsan. I am firmly convinced that its toxicity is lower than that of salvarsan, as can readily be seen by comparing the results of these 200 injections with the 600 injections reported above.

330 Newton Claypool Building.

MODIFICATIONS OF MacKENZIE INK POLYGRAPH

R. EDWIN MORRIS, M.D., MINNEAPOLIS
Teaching Fellow, University of Minnesota Medical School, Minneapolis

Certain modifications of the MacKenzie ink polygraph have been made and have proved of definite value in our work in the University Hospital. These are as follows:

Fig. 1.—Original MacKenzie polygraph.

1. The spring *A*, which holds the roller *B*, has been replaced by a bridge *C*, which is provided with set screws *D*; these

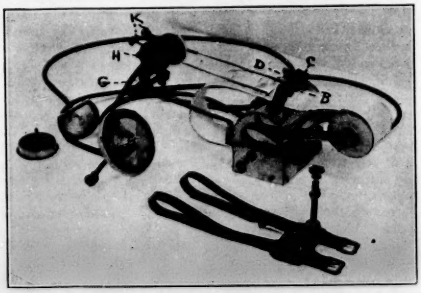


Fig. 2.—Modified polygraph, dismounted. Showing modifications.

can be adjusted so as to regulate at will the pressure on the axle by the spring, thus adjusting the paper feed. This substitution has resulted in a much more perfect control of rate in supplying the paper.

2. The distal portion of modification ring *E* (Fig. 1), has been removed, with part of the outer surface of the ring, thus leaving a shoulder (*F*, Fig. 3), which permits tension. These changes permit the tambours to be detached much more readily and allow definite ease of adjustment.

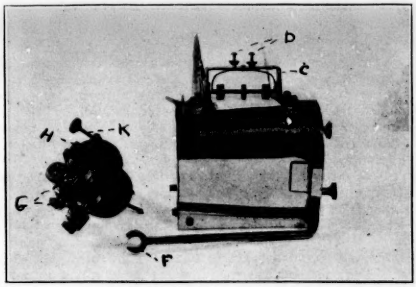


Fig. 3.—Modified polygraph assembled.

3. To the upright (*G*) of each tambour support a stationary vertical bar (*H*) has been attached, through the upper end of which runs a micrometer screw (*K*) which permits a delicate and accurate control of the pens. This modification corresponds to the fine adjustment of a microscope and permits rapid, accurate and independent adjustment of the pens at will.

NEEDLE HOLDER

W. P. MEGRAIL, M.D., WHEELING, W. VA.

This needle holder consists of two blades and a screw or rivet which connects the blades and forms a hinge at the proximal end of the instrument. The rigid blade has a suitably curved handle and a hook shaped jaw at the distal end, and near the jaw is a slot through which passes freely the opposite spring blade, which has a jaw on its distal end.

Very slight pressure on the handles tends to straighten the spring blade, and forces its jaw against the hooked jaw of its rigid opposite blade.

Needle holder.

A slight projection near the distal end of the spring blade prevents the jaws from opening too wide.

The advantages of this instrument are:

It is simple, having only three parts.

It is not apt to get out of order.

It has a powerful grip, which is the application of what is known in mechanics as the "toggle joint."

It will hold any needle, and is not so liable to break them because it grasps them on the edge instead of on the thin, flat or curved sides.

Consumptive Wins Suit.—A citizen of Toronto a short time ago brought action against a well known manufacturing jewelry firm charging that he had contracted tuberculosis while in the employ of the company. This, he claimed, was the result of negligence on the part of the employers in not providing proper ventilation of the building; dust and fumes being not properly removed. The jury deliberated for several hours and brought in a verdict in favor of the plaintiff, awarding him damages to the extent of $3,000. This is believed to be first case of its kind ever tried in Toronto.

HISTOLOGIC TECHNIC

L. W. STRONG, M.D., NEW YORK
Pathologist, Woman's Hospital

The following modifications of current histologic methods were devised to shorten the time for making routine reports on histologic specimens. It is always possible to harden and embed any individual specimen rapidly, but this implies a departure from the regular routine.

These modifications are adaptable as regular routine, and reduce the time for reports to three days, with an additional saving of labor and reagents, very considerable in itself. The resulting hardening, fixation, dehydration and clearing of the tissues leave nothing to be desired:

1. Ten per cent. liquor formaldehydi in 80 per cent. alcohol, over night.
2. Ninety-five per cent. alcohol until, say, 4 p. m.
3. Acetone, from one half to two hours, at convenience.
4. Chloroform-paraffin over night in a warm place.
5. Paraffin, four hours.
6. Embed.

This embodies the least handling and the most convenient intervals.

It will be found of the greatest convenience to have a wooden rack made with cells just large enough to hold the proper stock laboratory bottle, three rows deep and, say, twelve long. The first row of bottles contains formol-alcohol, the second 95 per cent. alcohol, and the third acetone. This wooden rack obviates the necessity of writing numbers on bottles or labels, prevents error from misplaced bottles, and enables the reagents to be used repeatedly or until weakened. Case numbers are printed for a thousand or more in advance on small slips, and each new case has its slip placed in the front row of cells, where it stays until the specimen leaves the rack.

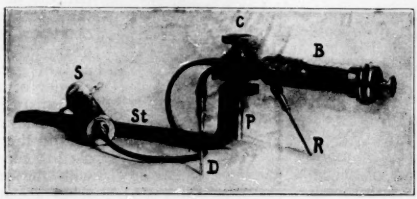


Fig. 1.—Unger's instrument for syringe transfusion: *C*, stop-cock; *B*, blood syringe connected to blood outlet; *S*, saline syringe connected to saline outlet; *D*, donor's cannula connected to donor's outlet; *R*, recipient's cannula connected to recipient's outlet; *St*, stand; *P*, pedestal by which the stop-cock is raised or rotated.

In embedding in paraffin, aluminum muffin tins will be found most serviceable, one sheet holding from six to eight cases.

All specimens coming to the laboratory during the day are described at a set time, late in the afternoon. Sections are taken then and placed in the formol-alcohol. The following morning they are advanced into 95 per cent. alcohol, where they remain until just before the day's specimens are described, when they are advanced into acetone. After the day's specimens are described, the acetone specimens are placed in chloroform-paraffin on the top of the paraffin oven over night.

On the following morning they are placed in 48 degree paraffin for two hours, and 52 degree paraffin for two hours, and are then embedded.

An Inexpensive Container for Use in Staining Acid-Fast Bacilli.—Often in the daily routine it becomes necessary to make a stain for acid-fast bacilli. We are familiar with the ordinary method of preparing the slide or cover glass with the addition of the stain and consequent heating. To avoid the usual phenomenon, that of spilling the stain, an ordinary nickel plated metal shaving stick soap container may be employed. These containers are in one piece with or without hinged cover (the latter preferred), and have a capacity of over 50 c.c. Several slides may be stained at one time. When not in use, the containers are practically air-tight, preventing evaporation of the stain.—GEORGE D. HORTON, Bacteriologist, Missouri State Poultry Experiment Station, Mountain Grove, Mo.

Therapeutics

HEMORRHAGIC CONDITIONS

(*Continued from p. 1779*)

TRANSFUSION OF BLOOD

The idea of introducing healthy blood into the circulation of a person threatened with death either from chronic disease or from some acute accident is not a new one. Early it became evident that there were certain objections to the introduction of the blood of lower animals into man, and the practice fell into disuse. During the last century, experiments were made on the direct transference of the blood from one person to another. This was attempted by means of rather complicated apparatus and under certain handicaps which, now, may be avoided. The earlier attempts of this sort were made before the days of perfect aseptic technic, and infection sometimes followed the operation of transfusion. Recently, because of an increased interest in the possibilities of transfusion, there have been published descriptions and results of several new methods. These methods tend to the elimination of those factors that are responsible for untoward symptoms following transfusion. As a result, transfusion in the hands of a trained and experienced operator is fraught with little or no danger to either the donor or the recipient of the blood. This fact has led investigators to experiment on many different types of disease in which previously it would not have been deemed advisable to transfuse.

When transfusions were first attempted, and even up to recent years, little thought was given to the physiology of the blood and to the part played by changes produced in the blood during the progress of the transfusion. With a knowledge of the processes concerned in coagulation, and also with the perfection of simple and reliable methods for testing the properties of the blood plasma and red blood corpuscles, unfavorable results, due to the infusion of the blood itself, are uncommon. Untoward symptoms do not occur in more than 10 per cent. of the transfused cases. Some of these are trivial and do not last long; others, however, may be of a serious nature. Some of the symptoms resemble those seen in serum sickness, with a rise in temperature, chills, and the appearance of an urticarial rash. Others are of an anaphylactic character, accompanied by shock. However, with properly conducted tests it may be stated that there need be no fatal cases traceable to the transfusion itself.

Whatever untoward symptoms or fatal cases occur as a result of the transfusion may be traced to some disturbing element in the introduced blood; to the formation of a thrombus; to the introduction of an embolus, or to the dilation of an already weakened heart by too large an injection of blood or by a too great pressure exerted in the introduction of the blood.

The introduced blood may have the property of agglutinating or hemolyzing the blood of the patient. Recently, Satterlee and Hooker[1] have suggested three possibilities: (1) a disturbed trypsin-antitrypsin balance in the recipient's blood resulting in the formation of a serotoxin; (2) the disturbance of the protective colloids in the body cells of the recipient, exposing them to a reaction of antigen and antibody in the circulation of the recipient, and (3) a toxic disturbance resulting from incipient coagulative changes produced by physical influences arising during the process of the transfusion.

Agglutination and hemolysis can be avoided by preliminary tests. Infusion of syphilitic blood can also be prevented by a complement-fixation test of the blood of the donor. The problem of eliminating any other disturbing factors in the blood is still one to be investigated. Although several anticoagulants have been suggested for the prevention of coagulation, so far only two have been advocated, herudin (an extract of leech) and sodium citrate, and of these the sodium citrate has been shown to be the safer and more reliable. It has been found that herudin preparations, particularly those which have been prepared for some time, undergo a certain amount of chemical change with the production of a toxic substance. Sodium citrate, on the other hand, has been used very successfully with no, or but very few, untoward effects.

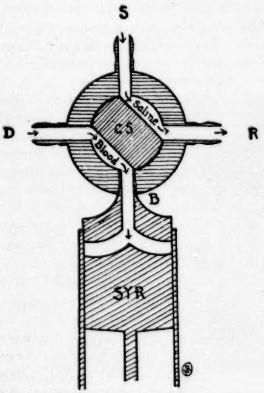


Fig. 2.—Unger's instrument. Donor's position: *D*, donor's outlet; *B*, blood outlet; *Syr.*, blood syringe. Blood passes from donor's vein through *D*, out at *B* into *Syr.* *S*, saline outlet; *R*, recipient's outlet. Saline is forced from saline syringe through *S*, out at *R*, into recipient's vein. Channel between *D* and *B*, donor blood circuit; that between *S* and *R*, recipient saline circuit. *CS*, central stopper (rotates through an arc of 45 degrees).

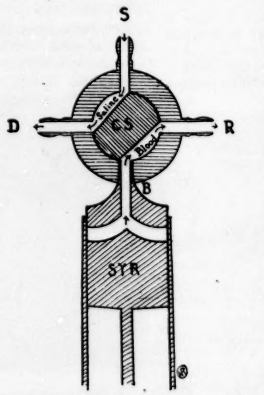


Fig. 3.—Unger's instrument. Recipient's position: *Syr.*, blood syringe; *B*, blood outlet; *R*, recipient's outlet. Blood is forced out of *Syr.* through *B*, out at *R*, into recipient's vein. *S*, saline outlet; *D*, donor's outlet. Saline is forced from saline syringe through *S* out at *D* into donor's vein. Channel between *B* and *R*, recipient blood circuit; that between *S* and *D*, donor saline circuit. *CS*, central stopper.

METHODS

Transfusion methods may be divided into two kinds, the direct and the indirect. By the direct methods are meant those in which the artery of the donor and the vein of the recipient, or the veins of each, are brought into contact either by being sutured or by being connected with a tube or with a cannula. Carrell was perhaps the first to suture the vessels together, and although this method has been successful in some cases, nevertheless it has the disadvantage that it is too time-consuming, and that the amount of blood passing from donor to recipient cannot be measured. This can also be said of most direct methods. Time is consumed in dissecting out sufficient lengths of the vessels so that they can be easily handled. A method of calculating the amount of blood transfused by means of frequent hemoglobin readings has been devised by Libman and Ottenberg.[2] For the purpose of preventing clotting of blood during its passage, when the cannula or straight tube is used, these are treated with sterile paraffin or albolene. These substances work admirably.

The cannula method described by Crile[3] is typical of other cannula methods. He uses a cannula through which he draws the proximal end of the divided vein and then turns back the end of the vein like a cuff over the end of the cannula. Over this he then draws the proximal end of the divided artery. The radial artery of the donor and the median basilic or cephalic of the recipient are used. This is rendered comparatively easy by having the patients lie beside each other, but with their feet in opposite directions. This operation brings into contact the intima of the artery with the intima of the vein and this greatly minimizes the liability to clotting of the blood.

Transfusion by means of a connecting tube is described by Vincent.[4] This consists in the use of glass tubes which are used to connect the vein of the donor with the artery of the donor. These tubes are usually from 3 to 8 cm. in length. In order to avoid clotting, the tubes are coated with various preparations, such as liquid petroleum, petrolatum, stearin or paraffin. It was found that petrolatum made too soft a covering, and stearin too hard and rough a covering. A mixture of petrolatum, paraffin and stearin in 2:2:1 proportions gives the smoothest and a sufficiently hard covering. The blood was found to run well in plain glass tubes; they might be used with a fair chance of success if it were not practicable to use the coated tubes.

Probably the first indirect method was the use of defibrinated blood, the fibrin having been removed after whipping up the blood. This method, on account of the possibility of infection and red blood and platelet destruction, was given up. In 1913, Lindeman[5] announced a simple method of transfusion which did not necessitate cutting down on and dissecting out the vessels of the donor and recipient. Other advantages of the method were that it could be carried out rapidly, and that the amount of blood used could be accurately measured. Lindeman's method consists of the use of several record syringes, each with a capacity of 20 c.c.

1. Satterlee, H. S., and Hooker, R. S.: Transfusion of Blood with Special Reference to the Use of Anticoagulants, THE JOURNAL A. M. A., Feb. 26, 1916, p. 618.

2. Libman, E., and Ottenberg, R.: A Practical Method for Determining the Amount of Blood Passing Over During Direct Transfusion, THE JOURNAL A. M. A., March 7, 1914, p. 764.

3. Crile: Ann. Surg., 1907, xlvi, 329.

4. Vincent, Beth: Blood Transfusion in Infants by Means of Glass Tubes, Am. Jour. Dis. Child., May, 1911, p. 376.

5. Lindeman, Edward: Simple Syringe Transfusion with Special Cannulas, Am. Jour. Dis. Child., July, 1913, p. 28.

Two operators are required, and special cannulas are used. After the donor and recipient have been placed in recumbent positions, the veins to be used are selected. As a rule the median basilic is the vein of choice. In infants the external jugular is better on account of its large size and easy accessibility. A

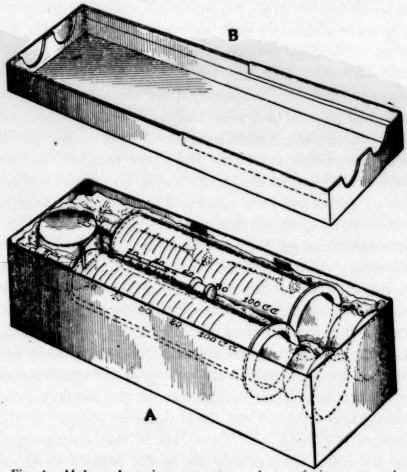


Fig. 4.—Abelmann's syringe apparatus. *A*, transfusion case packed, which can be carried in the coat pocket; *B*, cover for case which, when extended, serves as syringe tray (Fig. 5 *A*).

tourniquet is placed around the arm of the recipient, the skin sterilized, and the cannula inserted into the vein. The tourniquet is removed, and to avoid escape of blood, a syringe filled with sterile saline solution is attached to the cannula until ready for use. The arm of the donor is treated in a similar manner, with the tourniquet above the site of puncture. After this has been done, the syringes are rapidly filled with blood from the donor's vein and injected through the cannula into the vein of the recipient. To prevent clotting, after each injection of blood a little sterile saline solution is injected into the cannula in the recipient's vein. Before a syringe is used a second time, it must be cleansed with sterile water. Dexterity and speed are necessary. Other advantages in this method are that both arms of the donor can be used at the same time, and that there is no permanent injury to the blood vessels. The same vein can be used repeatedly for other transfusions. In 155 cases in which a total of 136,800 c.c. of blood was transfused, there was not one death referable to the transfusion.[6] The adults received from 1,000 to 1,800 c.c. at each transfusion.

The Lindeman method, however, was open to several objections. These were the constant connecting and disconnecting of the syringe, namely, inability to gage the force with which the blood was injected each time and the risk of clotting, inasmuch as the blood was exposed to the air when the syringes were disconnected. It also required the services of two operators both expert in the handling of the syringes.

To obviate these objectionable features, Unger[7] devised an apparatus with a central stopcock arrangement, the stopcock of which could be arranged so that the blood drawn out from the vein of the donor with a 20 c.c. syringe could be injected into the vein of the recipient with the same syringe. Needles or cannulas are inserted into the veins of both donor and recipient as in the Lindeman method, and these are connected with the apparatus. Only one syringe is required for this, and at no time is the blood exposed to the air. Another feature of the apparatus is that the passages traversed by the blood can be kept clean by flushing them occasionally with sterile saline solution by means of another syringe attachment. Very good results without secondary symptoms have been reported with Unger's apparatus.

A somewhat different method of indirect transfusion is the use of blood to which has been added an anticoagulant. It has already been mentioned that the anticoagulants which have proved most successful are herudin and sodium citrate. Herudin, however, under certain conditions develops toxic properties which should exclude it for transfusion purposes. Sodium citrate has proved very favorable, and has some good features to commend it. One of these features is that blood may be drawn from a donor into the citrate solution and carried to another place for use. It may be kept on ice for a week and used. It does away with the usual operating room technic, and may be injected into the vein of a patient at his home.

In describing this method, Weil[8] states that it is simple. "Blood is aspirated from a vein and is at once well mixed with sodium citrate in 10 per cent. solution in water, in the proportion of 1 c.c. of solution to 10 c.c. of blood. Exceptionally one encounters blood which requires slightly more or slightly less

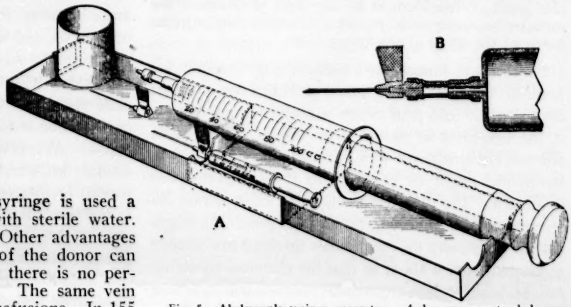


Fig. 5.—Abelmann's syringe apparatus. *A*, box cover extended, serving as syringe tray and dip pan; *B*, longitudinal section of syringe.

citrate proportionally." Lewisohn[9] has used this method, with slightly different proportions of sodium citrate, in twenty-five cases, the amounts of blood transfused varying from 900 to 1,600 c.c. In most of these cases there was a diuresis lasting not over twenty-four hours.

(To be continued)

6. Lindeman, Edward: Reactions Following Blood Transfusion by the Syringe Cannula System, THE JOURNAL A. M. A., Feb. 26, 1916, p. 624.

7. Unger, L. J.: A New Method of Syringe Transfusion, THE JOURNAL A. M. A., Feb. 13, 1915, p. 582.

8. Weil, Richard: Sodium Citrate in the Transfusion of Blood, THE JOURNAL A. M. A., Jan. 30, 1915, p. 425.

9. Lewisohn: Med. Rec., New York, 1915, lxxxvii, 141.

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SATURDAY, JUNE 17, 1916

THE TREATMENT OF EPIDEMIC MENINGITIS

Epidemic cerebrospinal meningitis is still sufficiently common in this country, as elsewhere, to create an interest in the therapy of this formidable disease. The success of the antimeningococcic serum devised by Flexner has made other modes of combating the infection seem superfluous, for the time at least. In harmony with what has been attempted in the case of other bacterial infections, compounds with antiseptic properties were long ago suggested as of possible value in treatment. Salicylates of mercury were included in the list. Even before the advent of the current serum therapy, however, clinicians questioned the value of the antiseptic substances. Thus Koplik[1] wrote, in 1907:

> The treatment of cerebrospinal meningitis in the past proves to the mind of the writer the futility of drugs. The disease is a self-limited one, much like pneumonia, its duration practically uninfluenced by any mode of treatment, the patients recovering with or without complications independently of the effects of any known drug.

Flexner and Amoss,[2] of the Rockefeller Institute for Medical Research, have called attention to a recent revival of the old plan to use antiseptic drugs directly in the treatment of epidemic meningitis. They point out two circumstances which from a purely theoretical standpoint might be expected to favor the chemical treatment. The infection tends to be local, within the cerebrospinal membranes, rather than general throughout the body; and the membranes involved are directly accessible from without so that the chemical substance can be brought into immediate relation with the seat of infection. To this may be added the fact that judging from its behavior outside of the body the meningococcus is not a highly resistant micro-organism; it is readily injured by chemical action and damaged by the products of its own growth. In the second place, there are immunologic differences between the different types or varieties of meningococcus known to ...r as etiologic agents in the production of the disease. Inasmuch as such micro-organisms are subject to therapeutic influence through antiserums only when correspondence exists between the infecting type of micro-organism and the particular specific antibodies present in a serum, it would not seem unlikely that bactericidal chemicals might be less specific and therefore more certain in their curative effects, irrespective of the variety of micro-organism to be combated.

In harmony with the foregoing views, Wolff[3] has recommended the employment of protargol, a compound of protein and silver containing 8.3 per cent. of silver in organic combination and said to be useful as a nonirritant substitute for silver nitrate. Before the working out of the serum therapy, compound solution of cresol had been employed in the direct chemical treatment of epidemic meningitis as early as 1902. The demonstration of the susceptibility of two types of laboratory animals, monkeys and young guinea-pigs, to meningococcic infection has made it possible to institute more exact studies of curative measures than limited statistics on man can furnish in such a highly variable disease. When cultures of meningococci are injected into the peritoneal cavity in the guinea-pigs and into the subarachnoid space in the monkeys, the micro-organisms set up local inflammations, in the exudate attending which, the fate of the meningococci can be followed precisely as in the human cases of epidemic meningitis in which the cerebrospinal fluid is removed from time to time by lumbar puncture.

The results of tests conducted by Flexner and Amoss[2] with protargol and compound solution of cresol are consistent in showing that the chemicals are not curative but rather injurious in the experimental meningococcic infection of animals. The symptoms of the treated animals were intensified rather than ameliorated. In explanation of this result, the reverse of what might theoretically be expected, it must be understood that the key to recovery from meningococcic infection is furnished by the phenomenon of phagocytosis. Whatever promotes phagocytosis, under conditions in which the beneficent leukocytes remain potent, facilitates recovery. Flexner and Amoss have found that the chemicals are antileukotactic and antiphagocytic; they are cell poisons of considerable power. Hence, when the drugs are brought into relation with the seat of infection, they prevent the immigration of leukocytes on an adequate scale, and they reduce phagocytosis by such leukocytes as have entered the serous cavities. Moreover, they also injure and bring about degeneration of the leukocytes themselves.

The New York investigators explain that the resultant of this set of injurious activities is to open the way for a free invasion of the blood by the meningococci and for almost unrestrained multiplication in the serous cavities. Undoubtedly the chemicals do exert a direct bactericidal action on such meningococci as

...s, H.: Epidemic Cerebrospinal Meningitis, Osler's Modern ..., ii, 517.

2. Flexner, Simon, and Amoss, H. L.: Chemical Versus Serum ...mic Meningitis, Jour. Exper. Med., 1916, xxiii, 683.

3. Wolff, G.: Deutsch. med. Wchnschr., 1915, xli, 1486.

come under their influence under conditions of suitable concentration, but not all the meningococci are thus destroyed. Those which survive multiply almost without hindrance, while the absence of detoxicating power on the part of the chemical permits the disintegration products of the destroyed bacteria to exert their poisonous effects on the animal organism. This is in marked contrast with the effect of the antimeningococcic serum which attracts leukocytes into the infected serous cavities, facilitates phagocytosis by supplying opsonin and promoting agglutination of the diplococci, and further exerts a direct antitoxic action on the toxins liberated by the disintegrated micro-organisms.

If, in the light of these newer experiments of Flexner and Amoss, the theoretical advantages expected to accrue from the action of bactericidal chemicals is more than offset by the harmful effects which they cause, the antiserum still seems to provide the logical therapeutic agent with which to combat epidemic meningitis. Innocuous in itself, it promotes those processes essential to recovery from the disease.

LOW EARNINGS AND DISEASE

The enthusiasts who emphasize, quite properly, the benefits which arise from the conservation of health often attempt to strike the popular imagination by venturing money estimates of the preventable wastes from disease and death. The Report on National Vitality, prepared for the National Conservation Commission by Irving Fisher,[1] finds one and a half billions of dollars as the lowest estimate of the avertable loss from disease and death in this country. It is even asserted that the true figures from the statistics available may well amount to several times this figure; but when statistics are based more or less on conjecture, they need to be stated with special caution.

Of course, such figures have little significance beyond emphasizing the overwhelming importance of human vitality compared with those interests which are usually measured in money. Disease means human misery which cannot be measured; it also means poverty and crime, twin evils, each playing into the hands of the other. Although the pauperizing effects of ill health are indicated in such allusions as have been cited, it is not always recognized with equal force that there is a "vicious circle set up between poverty and disease, each of which tends to produce the other." Poverty is by no means always the outcome of a lack of earning capacity attributable to disease. For this reason it is sometimes advisable to emphasize the fact that although the practice of hygiene need not be a luxury of the rich alone, yet wealth may promote health. To what extent the unfortunate poor may be able to remedy their hygienic lot need not be considered here. The facts of the interrelation of poverty and disease need to be known first of all. An interesting contribution of a statistical sort in this field has just been issued by the United States Public Health Service.[2] It considers the health of garment workers in New York City in relation to their economic status. Intensive budgetary investigations of wage earners' families in that large metropolis have afforded bases for several determinations and estimates of a minimum "adequate" family income in which a fundamental consideration was the minimum annual amount necessary to maintain the wage worker's family of five persons (man, wife, and three dependent children under 14 years of age) under healthful conditions of living. These determinations and estimates agree that an annual family income of between $800 and $900 is the minimum amount necessary for this purpose in New York City. If the statistics are classed in three groups according to the annual earning of family heads, under $500, from $500 to $700, and $700 and over, it appears that the poorest group has the largest average number of children per family. The percentage of mortality of children in the group in which heads of families earned less than $500 a year was 82 per cent. greater than, or nearly twice as high as, the percentage of mortality of children in the group in which the family heads earned $700 or more a year. These data indicate the same general variations in child mortality among families of different incomes as those shown by some other recent investigations. Approximately twice as great a proportion were poorly nourished in the group earning less than $500 a year as in the group earning $700 or more a year. The proportion of individuals having hemoglobin percentages under 80 was over twice as high in the group earning less than $500 a year as in the group earning $700 or more a year. It is interesting to note that not only was the proportion of anemic individuals greatest in the lowest income group, but also the average hemoglobin percentage was lowest in that group.

TUBERCULOSIS AMONG HEADS OF FAMILIES ACCORDING TO INCOME

Annual Earnings of Family Heads	Total Number	Percentage of Family Heads Tuberculous
Under $500	372	5.64
From $500 to $699	566	5.30
$700 and over	456	.44

Even more striking are the findings regarding the prevalence of tuberculosis. The proportion of tuberculous individuals among the garment workers who were heads of families showed extremely wide variations when the highest and lowest income groups were compared. The accompanying tabulation exhibits this comparison.

1. Fisher, Irving: Bulletin of the Committee of One Hundred on National Health, Being a Report on National Vitality, Its Wastes and Conservation, Prepared for the National Conservation Commission, July, 1909, No. 30.

2. Schereschewsky, J. W.: Health of Garment Workers, The Relation of Economic Status to Health, Pub. Health Rep., May 26, 1916, xxxi, 1298.

The significance of this wide difference is further seen when the tuberculosis rate in the lowest income group is compared with the average rate found among large numbers of wage earners, without regard to income. The rate for all male garment workers who were examined, including the single as well as the married, was 3.11. The examination of about 20,000 workers in the varied industries in Cincinnati by Robinson showed a tuberculosis rate of 1.1 per cent. The rate of 5.64 per cent. in the lowest income group is much higher than the rate found in several other physical examinations of large numbers of wage earners.

The government investigators have clearly presented the situation. The greatest number of poorly nourished, anemic, tuberculous workers in an extremely seasonal industry were in that group composed of the lowest paid and the least regularly employed.

THE INCREASING WASTE OF ADULT LIFE

Thanks to recent public health work, infant mortality, as well as that from tuberculosis and preventable diseases in general, has shown a marked decline. If this told the whole story it would be splendid. But it does not. The child born in 1916 has about ten times the expectation of life possessed by its predecessor of 1886. On the other hand, the man of 40 has probably fewer years to live than had the man of the same age thirty years ago. A study of this phase of the question has been made by Dr. Bolduan,[1] director of the Bureau of Public Health Education of the New York City Health Department.

From a comparison of the expectation of life for 1879-1881 with that for 1909-1911, for the city of New York, it appears that there has been a gain of 26.6 years of expectancy for the years from birth to the age of 35, as against a loss of 16.6 years for the period from the age of 40 on. In the most useful thirteen years of life there has been a loss of some two years. Dublin's figures for the registration states, quoted by Bolduan, show a parallel increase in the mortality for the years immediately after middle age.

Since man is mortal, life saved in the early period must accumulate in the mortality returns of the later periods. It is unlikely, moreover, that those who would have been eliminated but for the activities of preventive medicine and the improvement in methods of treatment will have the same average vitality as that displayed by those who survive into middle age in virtue of their own unaided powers of resistance. From these considerations alone we can deduce the practical certainty of a reduction in the expectation of life for the ages from the fortieth year on. For several reasons the extent to which this factor is operative in producing the diminution actually noted is, at present, largely a matter of speculation.

In the first place, the study of the sequelae of acute diseases from the actuarial point of view is only in its infancy,[2] so that figures as to impaired lives are not yet available. Nor is it easy to imagine any process whereby an accurate estimate may be made of the effect of preventive medicine in increasing the carrying into middle age of lives of subnormal resistance.

When every allowance has been made for these sources of error, there still remains a residue of wasted lives. A closer analysis reveals the fact that this is due to the insidious advance of the degenerative diseases and of cancer. Unfortunately, we do not possess statistics as to the age distribution of the population of all the states. This is a matter of such special importance in relation to the diseases in question that, until such figures are available, that is, until the registration area covers the whole country, we cannot estimate the gravity of this waste of adult life.

THE CENTENNIAL OF THE STETHOSCOPE

One of the great steps in the advancement of internal medicine was the discovery of auscultation. One hundred years ago, in 1816, Laennec, a favorite pupil of Corvisart, was appointed to the position of chief physician at the Necker Hospital in Paris. He was then 35 years of age. There he began his early studies on mediate auscultation with an instrument to which he gave the name of stethoscope, derived from the words στῆθος, the breast, and σκοπέω, examine. Hippocrates, says Sir Benjamin Ward Richardson, himself might have invented it, and would at once have understood it. Then followed the naming of sounds natural and diseased, throughout all the respiratory divisions, and after them the sounds of the heart, internal and external. We hold the literature thus founded, the language thus invented, to the present hour, the biographer writes; it is as familiar in our mouths as household words.

Immediate auscultation — the direct application of the ear to the chest — was tried by Hippocrates. We are told of this by Laennec himself, who quotes a passage from "De Morbis" to substantiate the statement. The limitations of such a method were clearly described by the French clinician. The process of mediate auscultation was therefore invented by him. It is worth while to read the early story of the stethoscope in Laennec's own words:[3]

In 1816 I was consulted by a young woman labouring under general symptoms of diseased heart, and in whose case per-

1. Bolduan, Charles F.: Chronic Diseases of the Heart, Kidneys and Arteries from the Standpoint of Etiology, Prevalence, Mortality and Prevention, Monthly Bull., New York Dept. of Health, April, 1916.

2. Dublin, L. I.: Typhoid Fever and its Sequelae, Am. Jour. Pub. Health, 1915, v, No. 1; A Study of 1,153 Cases of Scarlet Fever with Especial Reference to Their Sequelae, THE JOURNAL A. M. A., May 27, 1916, p. 1667.

3. The original account first appeared in Laennec's Traité de l'auscultation médiate et des maladies des poumons et du coeur, 1819, i. The translation here quoted is from Richardson, B. W.: Disciples of Aesculapius, 1900, i, 302.

cussion and the application of the hand were of little avail on account of the great degree of fatness. The other method just mentioned — immediate auscultation — being rendered inadmissible by the age and sex of the patient, I happened to recollect a simple and well-known fact in acoustics, and fancied, at the same time, that it might be turned to some use on the present occasion. The fact I allude to is the augmented impression of sound when conveyed through certain solid bodies, as when we hear the scratch of a pin at one end of a piece of wood on applying our ear to the other. Immediately, on this suggestion, I rolled a quire of paper into a kind of cylinder, and applied one end of it to the region of the heart and the other to my ear, and was not a little surprised and pleased to find that I could thereby perceive the action of the heart in a manner much more clear and distinct than I had ever been able to do by the immediate application of the ear. From this moment I imagined that the circumstance might furnish means for enabling us to ascertain the character, not only of the action of the heart, but of every species of sound produced by the motion of all the thoracic viscera, and, consequently, for the exploration of the respiration, the voice, the rattle, and perhaps even the fluctuation of fluid extravasated in the pleura or pericardium. With this conviction I forthwith commenced, at the Hospital Necker, a series of observations, which have been continued to the present time. The consequence is that I have been enabled to discover a set of new signs of diseases of the chest, for the most part certain, simple, and prominent, and calculated, perhaps, to render the diagnosis of the diseases of the lungs, heart, and the pleura as decided and circumstantial as the indications furnished to the surgeon by the introduction of the finger or the sound in the complaints wherein these are used.

With the stethoscope in its various improved, modern forms as a daily — almost hourly — aid to every practitioner of today, it is needless to point out the part which this simple instrument plays in clinical medicine. Laennec's invention was individual in an unusual degree. No one could exhibit jealousy or display rivalry or claim priority. The actual simplicity of the discovery, coupled with its overwhelming usefulness, says Richardson, concealed its greatness until its history was made, and its originator stood alone in his glory. The history of the adoption of the stethoscope into practice shows that men in medicine, like those in other walks of life, may show a pronounced capacity for resisting the inroads of knowledge. Mental inertia does not always fade in the light of novel and progressive ideas. So the "listening tube" of Laennec found its critics in the olden days. It was looked on by a few as a toy. Others complained that it was inconvenient to carry the original instrument — a cylinder of wood a foot long, divisible in the middle to make it easily portable. It was easier, so the statements went, to apply the ear directly to the chest of the patient, and furthermore, one thus perceives more sounds at the same time. It is no longer necessary to explain and reply as Laennec did. What he wrote in his classic work on "Mediate Auscultation" still holds good:

I do not hesitate to affirm that physicians who confine themselves to immediate auscultation can never acquire very great accuracy of diagnosis, and will from time to time be liable to commit serious errors.

Current Comment

THE BLOOD SUGAR AFTER SURGICAL PROCEDURES

Variations in the sugar content of the blood have recently[1] been investigated particularly on animals subjected to a great diversity of experimental conditions. The conclusion has been reached that departures from the normal range of sugar concentration, particularly in the direction of hyperglycemia, may readily arise. Alterations in temperature, hemorrhage, anesthesia, drugs, operative procedures and psychic disturbances exemplified in fear and rage have been reported to lead to a more or less marked transient increase in blood sugar content. With perfected technic it has become possible to test some of the claims and hypotheses by a comparison with statistics derived from the human subject. Among the recent reports the data obtained by Epstein and Aschner[2] at the Mount Sinai Hospital, New York, are of particular value in respect to the number and diversity of the clinical conditions observed in man. As examples of normal averages, these figures, obtained in seventy-seven cases studied after a period of starvation varying from twelve to twenty hours, are corroboratory of the now generally accepted values: The sugar content of the blood in males (ranging in age from 15 to 74 years) varied from 0.074 to 0.109 per cent. In females (ranging from 15 to 60 years), the readings varied from 0.066 to 0.104 per cent. Thus the average for males was 0.096 per cent., and for females 0.084 per cent., giving a general average of 0.09 per cent. for both sexes. It appears from these newer data that the influence of psychic factors, such as pain, fear of operation, and fear of anesthesia, on the blood sugar content apparently is negligible. With respect to other incidents, such as the nature and duration of anesthesia, the location of operations and the degree of shock incidental thereto — factors which have been widely discussed in connection with blood sugar — the results are more significant. There is a decided increase after anesthesia and operation in all kinds of cases. Where the anesthesia lasted more than one hour the average percentage increase of sugar in the blood varied from 32 to 89 per cent. As the outcome of their observations, Epstein and Aschner conclude that there was no difference between the effect of intraperitoneal operations and extraperitoneal operations on the sugar content of the blood. The anesthesia played the important rôle in the production of the hyperglycemia observed. The more marked increases in blood sugar content appeared when the anesthesia lasted one hour or more. The operation of nephrectomy had an especially marked effect in the blood sugar content, and the operation of itself was responsible for a good part of the hyperglycemia, over and above the effect of the prolonged anesthesia. Precisely why glycosuria does not appear more frequently in these hyperglycemic conditions is still a problem.

1. Compare, for example, Bang, I.: Der Blutzucker, Wiesbaden, 1913.
2. Epstein, A. A., and Aschner, P. W.: The Effect of Surgical Procedures on the Blood Sugar Content, Jour. Biol. Chem., 1916, xxv, 151.

THE BACTERIA OF MILK FROM NORMAL UDDERS

That the milk of healthy cows, even under ideal dairy conditions, is contaminated as soon as secreted was established in 1899.[1] More recently, epidemics of sore throat[2] and appendicitis,[3] traced to milk, have drawn particular attention to the presence of streptococci in normal udders; with respect to the nature and frequency of other types of bacteria in milk, almost nothing is known. Yet in view of the fact that the number, especially of streptococci, in milk is proposed as an index to its healthfulness, and in view of the wide consumption of milk as the chief sustenance of infants and many invalids, the question of the frequency and the types of bacteria in certified milk calls for definite investigation. Such an investigation has been reported by Evans[4] of the U. S. Department of Agriculture. In a study of 192 samples of freshly drawn milk from 161 healthy cows of five different dairies supplying milk to Chicago and to Washington, D. C., she has found a definite udder flora comprising bacteria of a parasitic nature — streptococci, micrococci and bacilli. Long-chain streptococci, which may be virulent, were isolated from twenty-nine, or 15.1 per cent., of the 192 samples, including milk from all five dairies, and in numbers ranging from very few to 264,000 per cubic centimeter. The milk-souring organism, *Streptococcus lacticus*, was not found. Micrococci—mostly pyogenic staphylococci, the organisms which, when virulent, cause furuncles, abscesses, suppuration and septicemia — were found in 113, or 58.8 per cent., of the samples, and in numbers up to 80,000 per cubic centimeter. Animal inoculations proved some of these to be virulent; the majority were nonvirulent. Bacilli — chiefly of a type related to the bacillus of contagious abortion — were isolated from forty-five, or 23.4 per cent., of the whole number of samples, and in numbers as high as 50,000 per cubic centimeter. One type, designated *B. abortus var. lipolyticus* because of its activity in decomposing butter fat, manifests its presence in the unpleasant flavor and odor of ripened cream. Two other *B. abortus* types resembled comparison cultures isolated from pathogenic sources. The investigator points out that when organisms enter into the digestive tract with other food, the body tissues and fluids are protected by the mucous membranes against the ravages of the bacteria, and that therefore it cannot be assumed that bacteria which are pathogenic for inoculated animals would be injurious to human beings when thus taken into the body in milk. Nevertheless, the fact that the bacteria which she found commonly present in milk from healthy udders were parasitic and, in some cases, virulent in type, should hasten the growing conviction that milk is certified only when it is pasteurized.

1. Moore: Proc. Soc. for Promotion of Agr. Science, 1899, p. 110. Ward: Bull. 178, New York (Cornell) Agr. Exper. Sta., 1900.
2. Capps, J. A., and Miller, J. L.: The Chicago Epidemic of Streptococcus Sore Throat and Its Relation to the Milk-Supply, THE JOURNAL A. M. A., June 15, 1912, p. 1848. Rosenow, Edward C., and Moon, V. H.: On Milk Epidemic of Sore Throat and the Virulence of Streptococci Isolated from the Milk, Jour. Infect. Dis., 1915, xvii, 69.
3. Rosenow, Edward C., and Dunlap, Stella L.: An Epidemic of Appendicitis and Parotitis Probably Due to Streptococci in Dairy Products, Jour. Infect. Dis., 1916, xviii, 383.
4. Evans, Alice C.: The Bacteria of Milk Freshly Drawn from Normal Udders, Jour. Infect. Dis., 1916, xviii, 437.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

DISTRICT OF COLUMBIA

Society News.—At the twentieth annual meeting and banquet of the Washington Medical and Surgical Society held at the Hotel Raleigh, loving cups were presented to the secretary, Dr. Walter Van Sweringen, and the treasurer, Dr. Frank E. Gibson, in appreciation of their work on behalf of the organization. The address of the evening was made by Dr. Edward Martin, Philadelphia, on "Psychologic Surgery."

Personal.—Dr. Harvey W. Wiley, Washington, president of the United States Pharmacopeial Convention, gave a dinner to the trustees of the organization, May 5.——Dr. George M. Kober, Washington, has been elected president of the Washington Sanitary Housing Company, and Mrs. George M. Sternberg has been elected a member of the board of directors to fill the vacancy caused by the death of her husband, General Sternberg.——Dr. Carroll E. Bingman, Washington, has accepted a position with the First Aid Department of the American Red Cross.

ILLINOIS

Physicians Vindicated.—At the completion of the testimony for the plaintiff in the damage suit of $25,000 brought by Oscar Oserud against Drs. Emanuel M. Rundquist and C. Olof H. Nordwall for alleged malpractice in performing a surgical operation, Judge Frost on May 31 ordered the jury to bring in a verdict for the defendants, stating that the testimony had failed to substantiate the claim, that the physicians had erred in their conduct of the operation.

Hospital News.—The final campaign to raise a fund of $100,000 for the establishment of a nonsectarian hospital in Highland Park opened June 8, and it is announced that more than $60,000 has already been subscribed.——The Julia Rackley Perry Memorial Hospital has been incorporated at Princeton, and Messrs. H. H. Priestly, Cairo A. Trimble and H. U. Bailey have been named as the first board of directors. In the will of Mrs. Perry $52,000 was devised for the building of the hospital, and the work of establishing the institution will be commenced without delay.

Chicago

Women's Board at Hospital.—Women interested in the Henrotin Memorial Hospital met at the residence of Mrs. Edwin Ryerson, June 4, to organize a woman's board for the institution.

Personal.—Dr. David O'Shea, who was recently seriously injured with a resulting traumatic pleurisy, has recovered and resumed practice.——Dr. Demetrius Staneff, who recently returned from service in the Balkans, gave a talk on the causes of the European War before the Hamilton Club, Brooklyn, May 31.

Addition to Mercy Hospital.—The new convent wing and addition to Mercy Hospital, which makes up the third unit of the new system, was opened to the public, June 15. The building corresponds in style to the two units previously built, has a frontage of 160 feet, and cost $275,000. The building will contain accommodations for sixty sisters and a hospital addition providing thirty private rooms and four private wards and a maternity department.

Graduate Lectures at the College of Physicians and Surgeons.—At the University of Illinois, College of Medicine, Chicago, during the graduate summer quarter (June 20-September 12), in addition to the scheduled courses, a series of lectures will be given before the faculty and students to which physicians and all others interested are especially invited. The series will include about twenty lectures on special research topics in the preclinical sciences by men from various institutions throughout the country. Detailed announcements of these lectures will be published from time to time. The opening of the graduate quarter will occur, June 20, and the first lecture of the series will be given on that date at 11 a. m. by Dr. Frank Billings on "The Relation of Graduate Work in the Fundamental Sciences to Clinical Study." President James will preside and will give an introductory address on "Graduate Work in Medicine."

INDIANA

Tuberculosis Societies Hold Joint Meeting.—At a joint meeting of the Indiana and Marion County societies for the prevention of tuberculosis, held in Indianapolis, May 24, a committee was appointed to study the bills which are to be presented before the 1917 legislature. Drs. Roscoe L. Sensenich, South Bend, and Henry B. Shacklett, New Albany, are members of this committee, and Dr. Alfred Henry, Indianapolis, is an ex officio member. A resolution was adopted on the death of Dr. William T. S. Dodds, a pioneer antituberculosis worker of Indianapolis.

Personal.—Dr. William T. Gott, Crawfordsville, secretary of the State Board of Medical Registration and Examination, has been reappointed a member of the board for a term expiring April 23, 1920.——Dr. Joseph Rilus Eastman, Indianapolis, has been selected to take full charge of all hospital units of the American Physicians Expedition Committee in Austria. Dr. Eastman sailed for Europe, June 17, accompanied by a staff of fifteen assistants from Chicago and Milwaukee.——Drs. James J. Stanton and Rodney E. Troutman, Logansport, received slight injuries by the overturning of an automobile near Remington, June 1.——Dr. Gustavus B. Jackson has been reelected president; Dr. Thomas B. Eastman, vice president, and Dr. Herman G. Morgan, secretary, of the Indianapolis Board of Health.——Dr. Charles W. Shill, La Fayette, had a slight cerebral hemorrhage, May 31.——Dr. George H. Brodbeck, Roann, was painfully injured in a collision between automobiles, 10 miles north of Wabash.

MARYLAND

Personal.—Dr. N. M. Keith, assistant to the director of the Brady Urological Clinic at Johns Hopkins Hospital, is on duty in France with a section of the Harvard unit.——Dr. Caleb N. Athey has been appointed chief police surgeon, and Drs. William S. Gilroy, James M. Craighill, Elliott H. Hutchins and Thomas P. McCormick have been appointed police surgeons of Baltimore.——Dr. Ferdinand O. W. Reinhard, Baltimore, has returned after five months' Red Cross service in Serbia.

Families to Report Diseases.—Heads of families are to be held responsible by the health department for the reporting of contagious and infectious diseases, in their homes, that are not reported by physicians. This statement was made in the first of a series of health bulletins issued by the health department and written by Dr. William T. Howard, Jr., assistant commissioner of health. Diseases that the law designates as reportable are: smallpox, cholera, yellow fever, measles, whooping cough, pseudomembranous croup, scarlet fever, diphtheria, mumps, varioloid, typhoid fever, tuberculosis, chicken pox, infantile paralysis, epidemic cerebrospinal meningitis and affections of the eye.

MASSACHUSETTS

Personal.—Dr. Rufus W. Sprague has been appointed medical inspector of the health department, to succeed the late Dr. Thomas H. O'Connor. Dr. Sprague has been medical examiner of the fire department for thirty-two years.——Dr. Lewis Fish, district health officer for the state department of health at Fitchburg, has resigned to devote his entire attention to private practice.

Harvard Appointments.—Dr. George Richards Minot, who was awarded a James Jackson Cabot fellowship last year, will work at the Massachusetts General Hospital under the direction of Dr. David L. Edsall.——Dr. Lawson Gentry Lowrey, who was also awarded a Cabot scholarship, will pursue his research work at Danvers State Hospital, under the direction of Dr. Elmer E. Southard.——The George Cheever Shattuck Memorial fellowship of $250 was given to Thomas F. Wheedon, Brookline; the Charles Elliott Ware memorial fellowship of $275 was awarded to James H. Brown, Jamaica Plain; the research fellowship in genetics, of the cancer commission of the university, was given to Clarence Cook Little.——Dr. Ernest G. Martin has resigned as assistant professor of physiology.

Hospital News.—Burrage Hospital for Boys and Girls on Bumkin Island in Boston Harbor was opened for the season, June 9. Dr. Philip A. Shinn, Boston, is resident physician, and the institution opened with sixty sick children. The hospital is H-shaped, 175 feet by 153 feet, two and three stories in height and fireproof.——The Boston Floating Hospital will open this season on June 28. The medical corps will be in charge of Dr. Henry I. Bowditch, and seventy nurses will be provided.——The fourth annual conference on the medical and social work of the Psychopathic Hospital, Boston, was held under the auspices of the trustees of the Boston State Hospital, June 10. Henry Lefavour, chairman of the board of trustees, presided and six papers were presented during the afternoon.

State Society Meeting.—The one hundred and thirty-fifth annual meeting of the Massachusetts Medical Society was held, June 6 and 7, in Boston, under the presidency of Dr. Charles F. Withington, Boston. At the meeting of the council, Dr. Samuel B. Woodward, Worcester, was elected president; Dr. Fred W. Taylor, Cambridge, vice president, and Dr. Philemon E. Truesdale, Fall River, orator. On the morning of June 6, clinics were held at the various hospitals of the city and in the afternoon there were symposiums on diabetes, nephritis, fractures and tuberculosis. On Tuesday evening the Shattuck lecture was delivered by Dr. Theodore C. Janeway, Baltimore, on "The Etiology of Diseases of the Circulatory System." The annual discourse was delivered Wednesday by Dr. David L. Edsall, Boston, and in the afternoon there was a symposium on "Goiter," and in the evening the annual dinner was served.

MISSOURI

Personal.—Dr. Paul Paquin, director of health of Kansas City, is reported to be critically ill with paralysis following an attack of meningitis.——Dr. Fabian L. Pratt, Kansas City, who has been on duty for a year and a half in the French army, has returned home on a six months' furlough.——Dr. Daniel R. Hill, Joplin, has been appointed district physician for the Jasper County Public Health Committee.

St. Louis

Personal.—Dr. Frederick Hagler, who recently returned after a year's service in Serbia, sailed from New York on the steamer *Frederick VIII* for Germany. He will work in connection with the American Physicians Expeditions Committee, at a base hospital in Munich.

Myer Memorial.—The committee in charge of the collection of a fund for a memorial of the late Dr. Jesse S. Myer, and which decided on an addition to the library of the Medical Department of St. Louis University, presented the memorial and a portrait of Dr. Myer to the university, at the commencement exercises, June 3.

Gift to Medical School.—It is announced that at a recent meeting the General Education Board appropriated $250,000 for the Medical School of Washington University. This makes a total of $1,000,000 which has been given to this medical school by the General Education Board towards a total of $1,500,000 for the purpose of placing the teaching of medicine, surgery and pediatrics on the so-called full time basis.

NEW YORK

Personal.—Dr. George P. Paul, formerly of Round Lake, Boston, has started for Trinidad in the service of the Rockefeller Foundation.——Dr. George E. Blackham, Dunkirk, delivered the commencement address at St. John's Military Academy, Delafield, Wis., June 10.——Dr. Albertus L. Fagan has been reappointed health officer of Herkimer for a term of four years.

Dental Education in New York.—Recent amendments have been made to the New York Public Health law relating to the practice of dentistry. The principal change is the requirement of three years' work in a registered medical school, or graduation before the student begins the dental course, which has been extended from three to four years. For graduates in medicine, a special course of study covering two years in a registered dental school is demanded.

New York City

Free Beds at Park Hospital.—The Park Hospital, 395 Central Park West, has available a number of free beds for the care of acute, noncontagious cases among the worthy poor. Admission will be made on application of the family physician, and on presentation of a letter from the physician, containing diagnosis assurance that the case is a proper one for free hospital treatment.

New Floating Hospital.—The new floating hospital of St. John's Guild, the *Helen C. Juilliard*, a model of its kind, built and equipped at a cost of $125,000, was shown to the public at a reception given on board the vessel on the afternoon of June 7. The boat has a legal carrying capacity of 2,400 but

it is proposed to limit the number to 1,800 in order to improve the service. The boat is equipped to care for more serious cases than floating hospitals have been able to handle before and is fitted for service the year around.

Personal.—Dr. Henry W. Wandless has been appointed clinical professor of ophthalmology in the University and Bellevue Hospital Medical College.——Dr. Carroll Chase, Brooklyn, sailed for France on the *Chicago*, June 4. He will do hospital work under the auspices of the American Relief for France and her allies.——Dr. Bernath Weiss, Jamaica, sailed for Europe, May 29, on the *Nieuw Amsterdam*, and expects to join the sanitary corps of the Austrian army.——Dr. Harold Neuhof was awarded the Alumnus Association prize of $500, awarded biennially to an alumnus of the College of Physicians and Surgeons for the best medical essay submitted on any subject the writer may select.——Dr. Vera Dantaschakoff has been elected instructor in surgery at the College of Physicians and Surgeons, and Dr. Rosalie Slaughter Morton, attending physician at the Vanderbilt Clinic. This is the first time in the history of the college that instruction will be given by women lecturers.

Typhoid Fever Among Hospital Employees.—Two orderlies employed at St. Mary's Hospital, Jamaica, have typhoid fever, a nurse is employed at Riverside Hospital who gives a history of having had typhoid fever some four months ago, and in addition there are several other cases of typhoid fever in the city hospitals. In view of these facts the department of health has sent a letter to all the hospitals in New York calling attention to the unprepared condition of the hospitals, from a defensive point of view, as shown by the fact that several employees have contracted the disease from patients suffering from typhoid fever. The department requests that an investigation be made of the previous histories of all employees coming into contact with patients in any way, whether or not they have typhoid fever, and that examinations of feces and urine be made to determine if they are carriers. I. is further urged that all employees be at once immunized against typhoid fever. The necessary vaccine will be furnished gratis by the department.

OHIO

Gorgas in Dayton.—At the annual meeting and banquet of the Engineers Club of Dayton, May 31, Maj. Gen. William C. Gorgas, Surgeon-General, U. S. Army, was the guest of honor. His address detailed the benefits of sanitation and medical discovery in Cuba and Panama.

Personal.—Dr. John C. Reeve, Sr., Dayton, celebrated his ninetieth birthday anniversary, June 5, and was the guest of honor at a dinner given by the Medical Society of Dayton at the Dayton Club.——Mr. A. G. Lohmann, superintendent of the German Deaconess Hospital, has been elected president, and Dr. Eli R. Crew, superintendent of the Miami Valley Hospital, a member of the executive committee of the Ohio Hospital Association.

Cincinnati

New Rule at General Hospital.—It is announced that a rule is to be enforced that no physician or surgeon of the Cincinnati General Hospital can hold a similar position on the staff of any other hospital. It is also proposed that a chief of service in each department shall be appointed who will be a whole time officer and be in supreme control of that department.

Personal.—Dr. William Muhlberg, assistant medical director of the Union Central Life since 1907, has been elected medical director, succeeding the late Dr. Clark Wasgatt Davis.——Dr. Walter H. Stix has been appointed junior to the medical department of the Cincinnati Hospital, succeeding Dr. Louis G. Heyn, promoted to the senior staff.——Dr. Joseph Ransohoff has been appointed director general and Dr. Nora Crotty, secretary, for the state of Ohio, of the National Society for the Control of Cancer.——Dr. Derrick T. Vail has resigned as a member of the senior staff at the Cincinnati General Hospital after a service of fifteen years.

The Drake Memorial.—The memorial tablet of Dr. Daniel Drake at the Cincinnati General Hospital, which was presented by Mrs. Elizabeth Drake Morrill Edwards, great granddaughter of Dr. Drake, was unveiled with impressive ceremonies, June 10. After introductory remarks by Mayor Puchta, Dr. Joseph Ransohoff delivered an address on "Dr. Daniel Drake, the Founder of Medical Education in Cincinnati." The tablet was then presented to the medical faculty of the University of Cincinnati by Mr. Burgess Allison Edwards, son of the donor, and was accepted on behalf of the medical faculty by the dean, Dr. Christian R. Holmes. The tablet was then unveiled by Elizabeth Drake Morrill, great, great granddaughter of Dr. Drake. The tablet is the work of Clement J. Barnhorn and bears the legend "1785-1852, Creator of the Cincinnati Hospital and Ohio Medical College, Builder of Civilization in the Ohio and Mississippi Valleys, Daniel Drake, M.D."

PENNSYLVANIA

Adopts Higher Requirement.—An official communication from the Hahnemann Medical College of Philadelphia states that two years of college work will be required for admission to that institution for all students who matriculate in the session of 1917-1918 and thereafter.

Personal.—Dr. Edgar M. Green, Easton, has been appointed a member of the advisory board of the state department of health, succeeding the late Dr. George W. Guthrie, Wilkes-Barre.——In the suit for damages for alleged malpractice against Dr. James W. G. McLaughlin, Beaver Falls, by Ira L. and Anna Clear, the jury brought in a verdict, May 31, in favor of the physician.——Dr. William S. Wheeling, Spangler, chief surgeon of the Windber Hospital, is convalescent after a serious surgical operation.

Philadelphia

Hospital Buys Building Site.—The Rush Hospital for Consumptives at Thirty-Fourth Street and Lancaster Avenue has purchased a plot of ground 175 by 100 feet on Lancaster Avenue, east of Thirty-Fourth Street, adjoining the hospital building. The site will be used for an addition to the buildings of the institution.

Tablet Unveiled.—At the annual commencement exercises of the Women's Medical College of Pennsylvania, May 31, the epitaph bas relief tablet, "The Woman Physician," was unveiled with appropriate ceremonies. The tablet was presented by Dr. Rosalie Slaughter Morton, New York, of the class of '97, and is the work of Miss Clara Hill.

Completes Endowment Fund.—Jefferson Medical College will take with it into the merger with the University of Pennsylvania an endowment fund of $200,000. A year ago Daniel Baugh promised to give the college $100,000 if a like sum should be subscribed by June 16, 1916. The last $1,400 of the sum was raised at the annual dinner of the Jefferson Alumni Association on the evening of June 2.

Personal.—Dr. Albert P. Brubaker received the honorary degree of Doctor of Laws at the graduating exercises of the Franklin and Marshall College, June 8.——Dr. R. Tait McKenzie, head of the Physical Education Department of the University of Pennsylvania, who has been in the British service during the past year, will return and resume his duties at the university next September.

Correction.—In the issue of THE JOURNAL of the American Medical Association, May 27, p. 1735, under the caption of "Scholarships and Loan Funds in Medical Schools," the Woman's Medical College, Philadelphia, is credited with just one scholarship. During the session of 1915-1916, seventeen students were assisted to the following extent: one student received $75; three, $100; one, $125; one $150; ten, $175; (full tuition); one, $250; total, seventeeen, $2,650.

Public Health School.—The merger of the Medical School of the University of Pennsylvania with the Medico-Chirurgical and Jefferson Medical Colleges may be the means of securing for this city a school of public health which the Rockefeller Foundation has signified its intention of placing in an Eastern university. For several months a committee from the Rockefeller Foundation has been contemplating the University of Pennsylvania as a site for the school.

Medical Club Holds Reception.—The guests of honor at the reception of the Medical Club of Philadelphia, held at the Bellevue Stratford, June 9, were Dr. John B. McAlister, Harrisburg, president of the Medical Society of the State of Pennsylvania; Dr. Charles A. E. Codman, president-elect of the Medical Society of the State of Pennsylvania; Dr. Alexander Marcy, Jr., Riverton, N. J., representing the president of the Medical Society of New Jersey, and Dr. George I. McKelway, Dover, Del., president of the Delaware State Medical Society.

Dr. White's Benefactions.—In addition to the bequests of $160,000 in the will of the late Dr. J. William White for the University of Pennsylvania and its hospital, the university

has been bequeathed all medical pictures in Dr. White's office and home, the death mask of Dr. D. Hayes Agnew and the cast of his hand; the medical faculty of the university is authorized to select from Dr. White's library any books it may desire for the library of the medical school, and a fund of between $3,000 and $4,000, made up of gifts from patients, is turned over to the University Hospital. Charles S. W. Packard is named as trustee to succeed Dr. White in a declaration of trust covering the Weightman donations of $50,000, and the residue of the estate is left in trust for the benefit of the widow, and at her death, $5,000 is to be paid to the University of Pennsylvania on condition that the trustees invest it for a period of one hundred years after Dr. White's death. At the end of this period, the fund is to be added to the general endowment fund of the University Hospital.

RHODE ISLAND

Mental Hygiene Society Organized.—The Rhode Island Society for Mental Hygiene was organized and incorporated, March 21. Its aims and purposes are to work for the conservation of mental health; to assist in raising the standards of care and treatment for those individuals who suffer from or are in the danger of developing a mental disorder; to study and assist in the proper care of the delinquent child, one of the most important social and humanitarian problems; to promote the study of feeblemindedness, epilepsy and inebriety, and to distribute knowledge concerning the causes, the treatment and prevention. The officers are: president, Rathbone Gardner; vice presidents, W. H. P. Faunce, and R. H. I. Goddard, Jr.; treasurer, Zechariah Chafee; executive committee, Dr. G. Alder Blumer, Providence; Dr. Arthur H. Harrington, Howard; Dr. Charles A. McDonald, Providence; Dr. Arthur H. Ruggles, Providence; Prof. James Q. Dealey, Judge Howard P. Gorham, and secretary, Dr. Frederic J. Farnell, Providence.

New Officers for State Society.—At the annual meeting of the Rhode Island Medical Society, held in Providence, June 1, the following officers were elected: president, Dr. Edmund D. Chesebro, Providence; vice presidents, Drs. John Champlin, Westerly, and Gardner T. Swarts, Providence; secretary, Dr. James W. Leech, Providence, and treasurer, Dr. Winthrop A. Risk, Providence. Dr. William McDonald, Jr., Providence, read a paper on "The Light Under the Bushel," and Arthur L. Hill, Boston, made an address on "Some Randon Thoughts on Law and Medicine." At the annual dinner, Dr. G. Alder Blumer, Providence, served as anniversary toastmaster. The principal speaker of the evening was Dr. Frederick M. Allen of the Rockefeller Institute for Medical Research, New York, whose subject was "Diabetes." The Fisk fund prize for the year was awarded to Dr. Allen G. Rice, Springfield, Mass., for his essay on "The Value of Blood Pressure in the Diagnosis and Prognosis of Disease."

CANADA

Personal.—Dr. Alex D. W. Kay, resident physician at the Victoria Hospital, London, Ont., has been appointed superintendent of St. Luke's Hospital, Ottawa.——Maj. William E. Nelson, Westmount, Montreal, has gone overseas and will be attached to one of the hospitals in France.——Dr. Charles E. A. Trow, Shakespeare, Ont., has joined the Canadian Army Medical Corps.——Capt. W. Thomas B. Edmison, Hastings, Ont., is attached to the Ramsgate Military Hospital, Ramsgate, England.——Dr. David Donald, Victoria, B. C., has returned from the front and is now attached to the Canadian Headquarters Staff, London, England.

Ontario Medical Association Meeting.—The annual meeting of the Ontario Medical Association was held in Toronto, May 31 to June 2. Considering the fact of war time, the attendance of over 450 was very gratifying to the officers in charge. Dr. Harry B. Anderson, Toronto, presided. Referring to medical education in the province, he advocated a strict uniform examination for the practice of medicine, and no granting of special privileges to those not properly trained. On organization of the medical profession, Dr. Anderson stated there were now thirty-five local medical societies in the province ready to affiliate with the Ontario Medical Association. Dr. Elliott P. Joslin, Boston, read a paper on the "Treatment of Diabetes Mellitus." Prof. Alexander D. Blackader, Montreal, delivered an address on "Drugs and Medicinal Agents." After the war he thought that the Canadian physician should favor the home-made or British made product, as certain lines of drugs commenced to be manufactured in Canada had proved eminently satisfactory. The president stated after this paper had been discussed that the Dominion government had notified him that it purposed revising the "patent medicine" act and advised the association to make representations to the government along such lines. The following committee was appointed to take charge of the matter: Drs. Robert D. Rudolf, Charles P. Lusk, John Ferguson, Toronto; James Third, Kingston; Paul L. Scott, Toronto, and James H. Mullin, Hamilton. Prof. Solomon Solis Cohen, Philadelphia, gave an address on "The Treatment of Pneumonia."

A very interesting and profitable demonstration of the use of moving pictures in showing the surgical technic as used in the New York Polyclinic was given by Drs. John A. Wyeth, John A. Bodine and Charles H. Chetwood, all of New York. Dr. Weston A. Price, Cleveland, introduced an intesting paper on "Mouth Infections and Some of the Mechanisms by Which They Produced Localized and Systemic Diseases." Senator J. S. McLennan, vice chairman of the Dominion Military Hospitals Commission, spoke at some length on the plans of the commission in dealing with invalided soldiers. Drs. George W. Ross and Herbert K. Detweiler, Toronto, told how common "colds" could be prevented by inoculation. Their method consisted in the inoculation of a mixed vaccine prepared from the culture of different strains of organisms obtained from patients suffering from colds. The following officers were elected: president, Dr. A. Dalton Smith, Mitchell, Ont.; general secretary, Dr. F. Arnold Clarkson, Toronto; assistant secretary, Dr. Frederick C. Harrison, Toronto, and treasurer, Dr. Jabez H. Elliott, Toronto. The social functions consisted of two garden parties, one at Dentonia Park farm, and the other on the beautiful grounds of Sir John Eaton.

GENERAL

Wine of Cardui Suit.—At the time of going to press the defendants—the American Medical Association—have presented evidence in surrebuttal and have closed their case. On Tuesday, June 13, Mr. Hough, attorney for the Chattanooga Medicine Co., addressed the jury, opening the argument for the plaintiff. On Wednesday, Mr. T. J. Scofield, attorney for the American Medical Association, presented the argument for the Association.

Medical Men of District and Virginia Meet.—At the biennial session of the Medical Society of Northern Virginia and District of Columbia, held at Herndon, Va., June 2, the following officers were elected: Dr. Harry A. Fowler, Washington, president; Dr. Charles Franklin Russell, Herndon, and Llewellyn Powell, Alexandria, Va., vice presidents; Dr. Joseph D. Rogers, Washington, corresponding secretary, and Dr. William I. Robey, Herndon, treasurer.

Divisions of Mental Hygiene and Rural Sanitation for Public Health Service.—The House of Representatives, June 8, passed the bill to provide divisions of mental hygiene and rural sanitation in the Public Health Service. The division of mental hygiene is to study and investigate mental disorders and their causes, care and prevention. The division of rural hygiene is to investigate improved methods of rural sanitation, and the prevention and suppression of communicable diseases. A similar bill is already pending on the Senate calendar.

Military Training for Medical Men.—Physicians and medical students will have an opportunity of receiving training at Fort Benjamin Harrison, Ind., where a military training camp will be opened, July 5. Field Hospital No. 1, under command of Maj. William W. Reno, M. C., U. S. Army, has been ordered to Fort Benjamin Harrison from its station at Fort D. A. Russell, Wyo. Ambulance Company No. 1, also stationed at Fort D. A. Russell, will be at the camp in command of Capt. Condon C. McCornack, M. C., U. S. Army. All information regarding this camp may be obtained on application to headquarters, Central Department, U. S. Army, Federal Building, Chicago.

Antinarcotic Law Construed.—The United States Supreme Court, June 5, affirmed the decision of the United States District Court in the case of the United States versus Jin Fuey Moy, and decided that the words "any person not registered" as used in Section 8 of the law "cannot be taken to mean any person in the United States, but must be taken to refer to the class with which the statute undertakes to deal —the persons who are required to register by Section 1." Under this decision a person who does not import, produce, manufacture, deal in, dispense, sell or distribute the drugs cannot be convicted of violating the Harrison Narcotic Law merely because he has some of the drugs in his possession.

Is the Hot Springs Reservation a Park or a Sanatorium?—Representative Sherley of Kentucky has suggested that the Hot Springs Reservation, Ark., is a sanatorium rather than a park, and that it should therefore be under the supervision and control of the Public Health Service rather than of the Interior Department. The suggestion was made in the course of a debate on a bill to authorize the Secretary of the Interior to furnish hot water from the hot springs, free of cost, to the Leo N. Levi Memorial Hospital Association. The bill had already been passed by the Senate and was passed by the House after a committee amendment had been added requiring the hospital association, on request of the superintendent of the Hot Springs Reservation, to send an ambulance for and to accept and treat without charge therefor any emergency patient sent to the hospital for treatment. The bill now goes back to the Senate for action with respect to the House amendment.

Coca Cola Case Reversed by U. S. Supreme Court.—For several years past the United States has been pursuing "Forty Barrels and Twenty Kegs of Coca Cola, The Coca Cola Company of Atlanta, Ga., Claimant," through a libel for condemnation, in the federal courts. The district judge directed a verdict in favor of the claimant, the Coca Cola Company, and judgment was entered accordingly. The Circuit Court of Appeals affirmed the judgment, and the case was then carried to the Supreme Court of the United States. May 22, the Supreme Court reversed the judgment and remanded the cause for further proceedings in conformity with its opinion. Mr. Justice Hughes delivered the opinion of the court.

In the prosecution of this case the government alleged in substance that Coca Cola was adulterated in that it contained an added deleterious ingredient, caffein, which might render the product injurious to health and that it was misbranded in that the name "Coca Cola" was a representation of the presence of coca and cola, whereas it contained no coca and little if any cola and was thus an imitation of these substances and sold under their distinctive name. The Coca Cola Company admitted the presence of caffein but denied that it was an "added" ingredient within the meaning of the law and that it was a poisonous or deleterious ingredient which might make the product injurious. The company denied that there were substances known as coca and cola "under their own distinctive names" and averred that Coca Cola did contain certain elements derived from coca leaves and cola nuts.

Whether caffein was or was not a poisonous or deleterious ingredient which might render Coca Cola injurious to health was not determined at any point in the case, since the courts below decided that it was not an "added" ingredient within the meaning of the law, thus sustaining the contention of the Coca Cola Company. The contention of the company was based on the claim that Coca Cola was a compound, known and sold under its own distinctive name, of which caffein was a usual and normal ingredient, and that therefore caffein could not be an "added" ingredient. The Supreme Court disposes of this contention in the following language:

"The fundamental contention of the claimant, as we have seen, is that a constituent of a food product having a distinctive name cannot be an 'added' ingredient. In such case, the standard is said to be the food product itself which the name designates. It must be, it is urged, this 'finished product' that is 'adulterated.' In that view, there would seem to be no escape from the conclusion that however poisonous or deleterious the introduced ingredient might be, and however injurious its effect, if it be made a constituent of a product having its own distinctive name it is not within the provision. If this were so, the statute would be reduced to an absurdity. Manufacturers would be free, for example, to put arsenic or strychnin or other poisonous or deleterious ingredients with an unquestioned injurious effect into compound articles of food, provided the compound were made according to a formula and sold under some fanciful name which would be distinctive."

In the courts below the right of the Coca Cola Company to use the words "coca" and "cola" for its product was sustained, irrespective of the presence or absence of either of the substances named, or of any product of either of them, on the ground that the name "Coca Cola" was a "distinctive" name and therefore within the protection of the proviso relating to articles sold under distinctive names. The government contended that these words were descriptive, conveying to the purchaser the impression that the article contained coca and cola; that in so far as they were distinctive of anything they were distinctive of coca and cola, and that an article sold as "Coca Cola" that did not contain coca and cola was therefore misbranded. On behalf of the company, it was claimed that while "coca" indicated one article and "cola" another, the two names taken together did not constitute the distinctive name of any other substance or combination of substances. Of this the Supreme Court says, in part:

"To call a compound by a name descriptive of ingredients which are not present is not to give it 'its own distinctive name'— which distinguishes it from other compounds — but to give it the name of another compound."

This decision of the Supreme Court materially strengthens the hands of the government in its operations under the Food and Drugs Act.

FOREIGN

Identification Records of the Insane and Feebleminded in Spain.—The province of Madrid is collecting finger-prints and other identification data of the inmates of all the asylums for the insane and feebleminded, etc.

Deaths in the Profession Abroad.—H. G. Blessing of Christiania who was physician and botanist to the Nansen polar expedition in the nineties.——P. Redard, medical superintendent of the Cannes health resort in France, and physician in chief to the state railroads.——V. Campenon, until recently professor agrégé of clinical surgery at the University of Paris, aged 70.

Physicians Elected Members of Spanish Legislature for Life.—Our Madrid exchange, the *Siglo Medico*, congratulates the profession on the recent elections which have added materially to the number of physicians in the Spanish senate. The Spanish universities are each entitled to a representative in the senate, and five have selected physicians for this position. There are now sixteen medical senators, most of them *senadores vitalicios*, that is, elected for life. Two of the latter, Cortezo and Pulido, are the editors and publishers of the *Siglo Medico*. The list of life senators includes also Cajal, Morejon and Ocaña.

WAR NOTES

French Hospital Needs Funds.—An appeal for funds to be used in the maintenance of the Ris-Orangis Military Hospital, near Paris, of which Dr. Joseph A. Blake, formerly of New York, is the head, has been issued by Harold J. Reckitt, the treasurer of the fund in this country. It is estimated that $60,000 will be needed for the maintenance of the institution during the next twelve months.

Contributions Gratefully Acknowledged.—Receipt of the second contribution of $5,000, made by the American Red Cross toward the support of the International Prisoners Bureau in Geneva, has been acknowledged. This bureau is conducted by the International Red Cross Committee as a clearing house of information between relatives of soldiers and sailors of all countries engaged in the war.——A letter has been received from Henryk Sienkiewicz, president of the Polish War Committee, acknowledging the receipt of $8,000 transmitted by the American Red Cross for the relief of Polish war sufferers.

LONDON LETTER

LONDON, May 29, 1916.

The War

THE WAR AND THE PROFESSION

At the general medical council the president, Sir Donald MacAlister, in his address reviewed the position of the profession with regard to the war. He pointed out that the demands of the military and naval services continued to put a severe strain on the resources of the profession. The central and local committees have been established to recruit for these demands, and at the same time to leave a fair provision for the medical needs of the civil population. It was expected that in 1915, the first complete year since the war began, the number of physicians added to the register, and available for military or civil work, would show a perceptible decrease. This would probably have been so but for the decision to recall from the combatant ranks medical students of the senior years, and but for the establishment of reciprocity with the dominions and with Belgium. In the result, the number of registrations in 1915 was 1,526, or 354 in excess of the average (1,172) for the preceding five years. The question of maintaining, in this and in future years, a supply of newly qualified physicians sufficient for the needs of the country, continues to engage attention. The calling-up of junior medical students, under the successive systems of recruiting, has given rise to some anxiety. The number of

students who during 1915 began medical study was 1,935. The number of first-year women students was 456—an enormous increase. The number of second-year students was 1,020. The average annual entry of first-year students registered during the preceding five years was 1,441. In 1915 there were thus nearly 500 first-year medical students in excess of the average annual number registered in the preceding five years. At the beginning of the present year the number of first-year students in actual attendance on instruction at medical schools (apart from teaching institutions) was 1,626. The expected depletion of students, as compared with normal years, had thus been more than compensated by new entries, and if things remained as they were, the position four years hence would not be unsatisfactory. It was thought advisable, however, to recommend that exemption from military service, already conceded to fourth-year and fifth-year students, should be extended to third-year students who showed their proficiency in the earlier subjects of the curriculum by passing a third-year professional examination at the end of the winter session. An order to this effect was accordingly issued from the War Office.

AMERICAN MEDICAL MISSION IN ENGLAND

A medical mission appointed by the United States government to study war conditions in Europe has arrived in England. Its members are Colonel Bradley, Major Lyster and Major Ford of the United States Army, and Surgeon Pleadwell of the United States Navy. They were entertained at dinner at the Athenaeum Club, May 24, by Director-General of the Army Medical Service, Sir Alfred Keogh and Sir William Osler, when they had an opportunity of meeting a number of officers of the Royal Army Medical Corps, the Canadian Army Medical Corps, and the Medical Service of the Royal Navy. The American ambassador was also present and paid a tribute to the work of the medical services of the United States Army and Navy in suppressing yellow fever and malaria and in bringing ankylostomiasis under control in Porto Rico and the Southern States. The mission will begin by inspecting the system of treating the sick and wounded in this country and then go to France to study the hospitals and medical arrangements.

The Suitability of the White Man for the Tropics

At a meeting of the British Science Guild, Mr. Andrew Fisher, high commissioner for Australia, delivered a remarkable address in which he described the operations of the Institute of Tropical Medicine in Queensland, part of whose investigations related to the effect of climatic conditions. As far as their statistics guided them, he said, it would appear that Europeans had a better chance of life in the tropical portions of Australia than in the temperate zone of that continent. It was remarkable, as the latest figures showed, that Queensland, largely a tropical state, had at once the highest birth rate and the lowest infantile death rate in Australia. This was a matter of worldwide importance. It was an interesting human experiment, confined not merely to a selected locality, but applied to a country three times as large as the United Kingdom. It was also of vital interest to Australia, for it was hoped that it would decide the question of climatic influence on the white man in the tropics, the maintenance of whom was a principle to which Australia has pinned her faith as a nation.

PARIS LETTER

PARIS, May 25, 1916.

The War

THE MEDICAL RECORDS OF THE WAR

M. Justin Godart, undersecretary of state for the medical service of the army, has just decided to collect the medical archives of the war at the Military School of Practical Medicine and Pharmacy at Val-de-Grâce. The object is not merely to put on record the activities of the medical service, but also, and more especially, to communicate the lessons of the war immediately to practitioners. For this purpose, military surgeons have been requested to send at once to Val-de-Grâce all documents and exhibits of interest. The matter so collected will be divided into three categories: (1) exhibits, (2) archives and (3) library. The exhibits will deal with the general organization of the material of the medical service at the front and in the interior of the country (models, of full or reduced size, of transports and hospital material); hygiene and epidemiology (models of sanitary installation); military surgery (weapons, projectiles and their relation to wounds); instruments and apparatus of all kinds (surgery, radiology, physiotherapy, and mechanotherapy); prostheses and casts; anatomic specimens; chemistry and pharmacy (asphyxiating gases, etc.). In the archives will be assembled instructions and circulars of the heads of the medical service. The papers of the sanitary formations (these will be deposited after the end of the war); reports of specialists; reports explaining the exhibits; graphs, diagrams, drawings and photographs of all kinds relating to the organization of the service (photographs of sanitary formations, transports and hospitals, hygienic installations, etc.), as well as the material for the anecdotic history of the service in the field. The library will contain books concerning the medical service as well as reprints from the medical publications relating to the war.

ANTITETANIC SEROTHERAPY AND ANAPHYLAXIS

At the Réunion médico-chirurgicale de la V-e armée, Dr. Genouville described five cases in which he employed, with antianaphylactic precautions, the injection of antitetanic serum in cases of wounded men who had already received an injection of this serum for previous wounds. First the injection of 1 c.c. was given very slowly in a vein of the elbow, and a few minutes later an injection of 10 c.c. hypodermically. The only phenomena noted were a slight serous eruption in one; a transient fever in another; a third person, a few minutes after an intravenous injection, developed a cough and slight faintness which lasted a quarter of an hour. This man had received a wound of the thigh from a fragment of shell two days before. He had breathed tear-producing gases, and showed signs of bronchitis. The subcutaneous injection was postponed until the next day, and produced no inconvenience. It is fair to ask oneself, in this case, whether the inhalation of the gases had not some causal relation with the phenomena observed. At any rate, these new observations show that, if appropriate antianaphylactic precautions are taken, one can without danger practice antitetanic injections on every wounded soldier, even if he has received an injection of the same serum several months before.

Dr. Dupérie remarked that there was no theoretical reason why the irritation of the respiratory apparatus by asphyxiating gases should be regarded as a contraindication to antitetanic serotherapy. The irritation, even generalized, of the broncho-alveolar structures does not seem to produce a condition of anaphylaxis in the same way that infectious diseases do when there is pulmonary localization, such as tuberculosis and its larval form, asthma. There is, however, some fear that a second injection of serum in those who are suffering from "gassing" may provoke serious symptoms owing to the congestion of the pulmonary system, as a result of asphyxiation. In this case, one is justified in guarding against anaphylaxis by using Besredka's method. On the other hand, the mildness of the immense majority of anaphylactic incidents which occur after the second hypodermic injection of serum seems to justify, in the present circumstances and in ordinary cases, the omission of Besredka's precautions. This, however, is not true for reinjections given intravenously or intraspinally. The severity of the anaphylactic symptoms in these conditions calls for the greatest prudence.

NONMAGNETIC STEEL INSTRUMENTS

Dr. Bergonié, professor of biologic physics and medical electricity at the Faculté de médecine of Bordeaux, has presented, to the Société de chirurgie de Paris, instruments in appearance similar to those in daily use, but which have the peculiarity that they do not start vibrating in the neighborhood of electromagnets. This property allows of their use in the extraction of projectiles by means of Bergonié's electrovibrator. It was indeed one inconvenience of Bergonié's method that, during the exploration in this operation, it was necessary to put aside forceps and so to deprive oneself of the aid of separating the lips of the wound, because even any nonmagnetic substances such as copper and silver will vibrate and cause error. Bergonié has used a new metal which is not affected either by attraction or vibration caused by electrovibrators. This metal is a steel alloy.

Death of Dr. Assicot

The death is announced of Dr. Assicot, intern of the Paris hospitals and of the ophthalmologic clinic of the Faculté. He had been professor of clinical ophthalmology of the school of medicine at Rennes since 1907. After serving through the first part of the campaign, he was appointed chief of the ophthalmologic center at Saint-Malo. From there he was sent as battalion surgeon to Verdun, and was killed at his post four days after his arrival at the front.

(*Continued on page 2000*)

PROCEEDINGS OF THE DETROIT SESSION

MINUTES OF THE SIXTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT DETROIT, MICH., JUNE 12-16, 1916

HOUSE OF DELEGATES

First Meeting—Monday Morning, June 12

[NOTE.—Practically all of the minutes as they appear this week are the official reports of committees as originally prepared and appearing in the Handbook of the House of Delegates. During their presentation slight additions were made which are noted as addenda at the end of the report of the first session.]

The House of Delegates met in the auditorium of the Wayne County Medical Society Building, and was called to order at 10:15 a. m. by the President, Dr. Albert Vander Veer, Albany, N. Y.

Dr. D. Chester Brown, Connecticut, chairman, reported that the Committee on Credentials had examined and approved the credentials of delegates which conformed with the rules of the House. One hundred and ten delegates were seated. The President thereupon declared the House duly organized.

The Secretary called the roll and announced a quorum present.

The next in order were the presentation, correction and adoption of the minutes of the sixty-sixth annual session, held at San Francisco.

The Secretary stated that the proceedings of the House of Delegates of the sixty-sixth annual session, held at San Francisco, had been published and a copy sent to each member of the House of Delegates. There were but two suggestions made in the way of correction of the minutes, one of which was received from an Eastern state, and the other from a Southwestern state, asking the Secretary why the record of the executive session of the House of Delegates had not been incorporated in the official minutes as published. The Secretary stated that the record of this executive session was not incorporated in the minutes because in accordance with usage and custom, minutes of such executive sessions were treated as is a committee of the whole.

The Secretary further stated that the Judicial Council in presenting that section of its report dealt with the discipline of members, adding to the published report the names of those disciplined.

Dr. Edward Guion, New Jersey, moved the adoption of the minutes of the San Francisco session as printed. Seconded.

Dr. Herbert B. Gibby, Pennsylvania, moved as an amendment that the minutes of the sixty-sixth annual session be corrected so as to include other minutes of the executive session. Seconded.

Dr. Guion having withdrawn his motion, the motion of Dr. Gibby was put and carried.

Dr. Guion moved that the minutes as printed and corrected be approved.

Seconded and carried.

Address by the President, Dr. Albert Vander Veer

Reports of officers being the next order, President Vander Veer delivered the following address, which was referred to the Reference Committee on Reports of Officers:

President's Address

To the Members of the House of Delegates of the American Medical Association:

I approach the duties of today with great sorrow. Our late President, Dr. Rodman, was a dear friend of mine, and the news of his death, while he was engaged in the activities of his professional responsibilities, was a shock to us all. Let us perpetuate his memory through our earnest desire to continue his labors, without their excellence.

Obituary notices have been presented to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and to his bereaved family we can only express our deep sympathy.

If one reads with care the necrology list of the past year, in THE JOURNAL, it is exceedingly impressive. In addition to President William L. Rodman, Fellows like Samuel B. Ward, Wisner R. Townsend and Henry L. Elsner of New York State, Henry B. Favill of Illinois, Frank J. Lutz of Missouri, and many others will be greatly missed. "Lest we forget," may the heritage of their "work well done" be an incentive to those of us yet remaining.

While not taking too much of your time, let me bring before you some of the important questions which, to me, seem worthy of your consideration.

MEDICAL LAWS

Members of such a representative body as this House of Delegates should ever be on the alert favoring good, and opposing evil laws, and it would seem that, in consultation and discussion with each other, it is possible for us to succeed in framing such acts as are best suited to meet the conditions existing in each particular state.

The consolidation of medical colleges, the requirements in preparation, exacted from the medical student, and limited enrolment, while all tending to increase the efficiency of the graduate, must also necessarily lessen their numbers.

It would seem proper for our educators to move somewhat cautiously in too severely limiting our output of physicians. At the present time, there is quite a demand for a good, reliable doctor, at many of the so-called country crossroads.

Dr. Horner, in charge of the Department of Professional Examinations, Education Department of New York State, informs me that a recent amendment to the public health law of New York relates to the legal requirements of the beginning of medical study. It does not materially advance the present requirements, but places in the hands of the Board of Regents of the University of the State of New York the power to do as they deem proper from time to time. This act of the legislature will place the state of New York on the same plane as high as any other in the Union.

It must be a great source of comfort to our President-Elect to note how rapidly the quarantine stations of our larger cities are coming under government control. Very recently Governor Whitman signed the bill placing the port of New York under United States supervision. All of this means harmony of action in prevénting the entrance and spread of diseases of a contagious and infectious nature. Only recently has the legislature of the state of New York enacted laws permitting the state board of health to enforce its rules regarding vital statistics, especially in births and deaths.

MEDICAL INSPECTION IN SCHOOLS

Two years ago the legislature of the state of New York passed a law appointing a state medical inspector of schools. Dr. Finegan, our assistant commissioner of education, has tabulated much of the work accomplished by medical inspection, at various times, and finds that over 90 per cent. of the

schoolchildren are physically deficient in some form or another, that is, enlarged tonsils, adenoids and such various conditions as are incident to early childhood; but this is also to be observed, that in cities in which medical inspection has been going on for a few years, there is a much smaller percentage of these children than in the rural districts where inspection is not yet made so thorough.

In a recent letter from Dr. Howe, the inspector, he makes the following statement:

"It is indeed gratifying to know the material progress being made in many sections in medical inspection in schools.

"More than one half of our states now recognize its great value and have provided for its enforcement by statutory measures, while most cities are conducting a systematic plan to better conserve the health of the schoolchild. This health service is really at the foundation of true preparedness of our country, as without strong bodies little could be accomplished in national strength.

"Closely allied to this special feature of educational work —for it is largely educational and made possible by its success—we find physical education and physical training provided for by the legislature of the state of New York.

"As a medical profession we will, I am sure, welcome the opportunity to lend our united influence to the upbuilding of any system having for its sublime purpose the welfare of the children of our country."

INDUSTRIAL DISEASES

This new classification, or addition to our previous nomenclature, should receive more serious consideration.

In this connection, our laws relating to workmen's compensation—the subject that is now so prominently presented —should receive greater attention from the medical profession. This duty is plainly manifest in the administration and settlement of claims. Much thought is also now being given to the investigation of health insurance.

TRUDEAU SCHOOL OF TUBERCULOSIS, SARANAC LAKE, N. Y.

This institution promises to be one of the most important that has yet been organized for the study and treatment of tuberculosis. It was opened May 17, 1916, its object being to give instruction to graduates and students who are desirous of understanding more thoroughly the treatment of all forms of tuberculosis. Among its teachers are some of the most eminent men in America. It was organized as a memorial to Dr. E. L. Trudeau. It was proposed to raise the sum of $500,000 as an endowment, and this amount is nearly completed, the income of which is to be used for conducting the school. The announcement and circular give an exceedingly complete outline of the work intended and the encouragement already given.

An additional factor in medical education is presented in a summer school, in connection with the Rome Custodial Asylum, for teaching special classes in the public schools and institutions for the feebleminded. Dr. Bernstein, the superintendent, will be pleased to give full details regarding this work.

I should be pleased to have these few remarks received as suggestions that as soon as the delegates from the different states and the sections forming the American Medical Association are appointed, they meet as separate bodies, prepare a report regarding the work accomplished in their particular territory, and send this to the President of the Association for his consideration, he to report on it to the House of Delegates.

PREPAREDNESS

How much is implied by this term at the present time! Patriotism defines the situation exceedingly well, and is to be noticed in the parades of citizens in our cities, and the efforts that are being completed for observance of Flag Day in so many of our states. Business and professional men in every walk of life have united with an earnestness most impressive. My vivid personal remembrances of our unpreparedness in the beginning of our Civil War, and what has been told me by my late associate, Dr. Macdonald, and my son, Dr. Edgar A. Vander Veer, regarding the unpreparedness they had to contend with as medical officers in the Spanish-American War, lead me to call your attention to the situation as it exists today of that exceedingly important aid to our government, in time of distress, namely, the medical profession of this country. Surgeon-General Gorgas is thoroughly alert, and his strong stand in his strong position has been of great help to Congress in framing suitable legislation.

The American Medical Association has a strong organization in connection with Red Cross work.

As will be noted by the report of the Committee on Red Cross Work presented at this meeting, the committee is thoroughly alive to the situation, and when once it is indicated what the classification of the work is that is required from the medical profession, the machinery will be started with, no doubt, excellent results following.

During the fall of 1915 the Clinical Club of Albany, composed of about fourteen of the younger men in the profession, discussed the situation, and by December had formulated a plan which they considered of sufficient importance to present to the Surgeon-General's Office. This outline has been much admired and discussed by those in authority in the surgeon-general's department, and it seems very proper to present the following editorial, entitled "The Albany Idea," which appeared in the June, 1916, number of the *Military Surgeon:*

"A very practical method of instruction in the methods and purposes of medical preparedness is being employed by the Clinical Club of Albany, N. Y. There is first a preliminary course, by reading, lectures and discussions on the various subjects necessary to the training of medical reserve officers. To facilitate this work, typewritten pamphlets, which are brief digests of the subjects of which they treat, are prepared and distributed among members to be read at leisure. For example, one on organization has already been issued, and others on the duties of medical officers, etc., are nearly finished.

"The club then proceeds to the solution of definite problems such as might reasonably arise in war, are of local importance and are within such limitations as could be expected in actual service. It is assumed, for example, that both New York and Boston have been occupied by the enemy and that our forces are retiring from these points, slowly and in good order, toward Albany, in the vicinity of which a strong defense is planned. An hypothetical enemy sympathizer is detected contaminating the local water supply —and the club sets itself the task of determining the nature and degree of contamination and restoring purity. The assumption is made that Albany is suddenly called upon to care for 100,000 refugees from New England and Southern New York, largely destitute women and children—and the club works out the local resources probably available for the food, shelter and care of such persons. Engagements resulting in 100,000 wounded in the course of a few days, from actions near Hudson, N. Y., and Pittsfield, Mass., are assumed, and the club, dividing itself into committees, ascertains the local resources available to assist in their care, including transportation, medicines, dressings, operating and hospital facilities, antitoxins, and vaccines, food, clothing, milk, nurses, beds and bedding, buildings especially suited to hospital purposes, etc. All these main subjects are further

gone into under many subheads, and the study is carried out with much detail and thoroughness. For example, the milk question alone is handled under fourteen subheads.

"This is the kind of practical study which we want. It not only visualizes the problem but gives it a local color which cannot fail to add greatly to its interest. Whether war conditions would create exactly such a problem as is assumed is of no importance. It serves its purpose if it shows the need of preparedness, if it demonstrates the importance of cooperation, if it trains the mind not only to conceive of the various difficulties which may arise but to progress in logical way to their solution. Solving one problem makes the next easier. Solving them in theory in time of peace facilitates their solution in reality in time of war.

"A great thing is to accustom one's self to new ideas and unfamiliar mental processes. Another most valuable result in this connection is the working out of methods and the enumeration of local resources—in which it is safe to say that many surprises would develop.

"The plan contemplates the institution of like inquiry to that begun in Albany throughout the country. If it were carried out generally and a summary of the results turned in to the government, these would constitute a mass of information which would be very instructive and valuable. If Medical Reserve Corps divisions generally would set themselves to finding out what part their communities were prepared to render in war, and if general medical societies would—say twice a year, devote an evening to the discussion of such subjects, it would be a long step in preparedness and patriotism. We earnestly commend this matter to their attention."

At the last meeting of the Clinical Congress of Surgeons of America, in a general way there was much discussion relative to the efficiency of our medical preparedness in case of any complication that might arise. About this time the government appointed an advisory committee of its most prominent citizens as consultants on various industrial subjects.

Later, when need for prompt action seemed urgent, I was asked as President of the American Medical Association to cooperate with the presidents of the Congress of American Physicians and Surgeons, the Clinical Congress of Surgeons of North America, and of the American College of Surgeons in appointing a strong committee of American physicians for the purpose of considering plans for civilian medical preparedness. At that time, the following communication was sent to those selected:

"Dear Doctor:

"In view of the fact that the work of this committee may meet any possible military emergency that may arise, the presidents of the American Medical Association, the Congress of American Physicians and Surgeons, the Clinical Congress of Surgeons of North America and of the American College of Surgeons have thought it wise to appoint a representative ad interim committee to tender the good offices of the medical profession to the War Department.

"In view of the fact that the work of this committee may assume official form, it is important that no phase of the subject may become known before it reaches the hands of the president.

"Very sincerely,

"ALBERT VANDER VEER,
"WILLIAM S. THAYER,
"FRED B. LUND,
"J. M. T. FINNEY.

"April 9, 1916."

A brief outline of some phases of the subject which will come up for consideration follows:

1. To provide a carefully selected list of highly efficient men, especially in the essential lines of work as follows: (*a*) A body of men whose training and experience would fit them peculiarly for sanitary work, etc. (*b*) A group whose training, experience and life's work show them to be especially equipped for duty in the line of internal medicine. (*c*) A list of men whose surgical training, experience and practical results show them to be eminently qualified for surgical work.

2. In addition to the foregoing, the committee could classify its lists according to age, etc., thereby aiding in the selection of civilians suitable for military duty at the front and at base hospitals, make a classification of hospitals, their capacity and efficiency, and aid in developing at as many hospitals as seems advisable, units composed of surgeons, internists, assistants, nurses, orderlies, and others, with drills, suitable to military requirements. (Motion pictures of such work would materially aid civilian units in learning military necessities.)

3. The committee could urge the great technical advantage of having trained medical, surgical and sanitary observers at every military and naval front and at base hospitals for the purpose of noting and reporting to the United States government the actual advances and deficiencies daily arising in the management of those most important features of warfare, the prevention of outbreaks of disease; the best handling of the wounded; the prompt healing of wounds; the conservation of limbs, etc., and the prompt return of fighting men to the front. It seems that in view of potent possibilities now so apparent, this field of preparedness—the humanizing life-saving feature—should keep pace with the plans for destruction. If we should become entangled in a serious conflict, the one certain thing is that our men as well as those of our adversaries will be wounded in large numbers. The prevention of disease and the proper care of the sick and wounded will have much to do with the outcome.

In addition to the evident advantages of systematic preparation, two practical facts seem apparent: In the first place if the committees from the medical profession are working in harmony with the committee on industrial preparedness (composed of representatives of the American societies of civil engineers, of mechanical engineers and of mining engineers and of the American Chemical Society) during times of peace, their mutual needs will be fully understood and can be accomplished with a minimum of friction and waste of energy. Secondly, such a critical classification of civilian positions, according to their individual efficiency would materially aid in assimilating any volunteer army with a maximum of speed and efficiency.

Following this, a meeting was held at the Union League Club, Chicago, April 14, 1916. The meeting was called to order, and Dr. J. M. T. Finney was chosen as temporary chairman. Dr. Frank F. Simpson was chosen as temporary secretary. The object of the meeting was stated and approved, and a permanent organization was then perfected by the election of the following officers: chairman, Dr. William J. Mayo; secretary and treasurer, Dr. Frank F. Simpson; executive committee, the officers, and Dr. Albert Vander Veer, Dr. William S. Thayer, Dr. Fred B. Lund, Dr. J. M. T. Finney, Dr. Franklin H. Martin, Dr. George W. Crile, Dr. George E. Brewer and Dr. Robert G. LeConte.

On motion, duly carried, the executive committee was requested to confer with the authorities at Washington regarding the advisability of the general plan as outlined in the call for the meeting to formulate such plans as may be deemed advisable after a conference and to call a meeting of the whole committee in the near future, probably at Washington, D. C. And the following is the list of names of those to whom the foregoing communication was sent: Frank Billings, John F. Binnie, Joseph C. Bloodgood, George Emerson Brewer, George W. Crile, George E. De Schweinitz,

J. M. T. Finney, Charles Gibson, Fred Bates Lund, Edward Martin, Franklin H. Martin, Rudolph Matas, W. J. Mayo, Charles H. Mayo, John B. Murphy, Lewis S. McMurtry, Albert J. Ochsner, Charles Allen Porter, Charles A. L. Reed, Emmett Rixford, Hubert A. Royster, F. F. Simpson, Richard P. Strong, William S. Thayer and Albert Vander Veer. And there was also appointed an auxiliary committee.

April 26, the executive committee conferred with the president of the United States. They called attention to the fact that in times of peace as well as in time of war the medical profession has always held itself in readiness out of a spirit of patriotism to serve the best interests of the government; that the European war has demonstrated the greater need for medical men and supplies than formerly was thought adequate or necessary, and lines of service which the civilian medical profession might render were indicated. The president expressed himself as being much pleased with the patriotic action of the medical profession, and assured the committee that the government would avail itself of the services tendered.

Late in April a number of conferences were held with Col. J. R. Kean, Director-General of Military Relief for the American Red Cross.

The question of cooperation between the committee of American physicians (on preparedness) and the Red Cross was considered carefully by the executive committee at its meeting in Washington, May 8. The conclusion reached was that while it is best for the two organizations to maintain their separate identity and to pursue their separate purposes diligently, hearty cooperation between the two organizations will result in their mutual advantage and in furthering their common cause. To that end, the Red Cross has appointed all the members of the National Committee to membership in the National Committee on Red Cross Medical Service, and Colonel Kean has been appointed an Associate Member of our National Committee.

As the following letter from Colonel Kean explains:

"May 31, 1916.

"Dr. Albert Vander Veer, 28 Eagle Street, Albany, N. Y.
"Dear Sir:

"The Executive Committee of the American Red Cross, at its meeting, May 26, 1916, appointed you a member of the National Committee on Red Cross Medical Service. This committee consists of thirty-six appointed and ten ex officio members. It includes in its membership all the members of the "Advisory Committee of Civilian Physicians and Surgeons on Medical Preparedness"—it having been decided, on consultation with the executive committee of that advisory committee, that in this way could be best secured the objects which the American Red Cross and the advisory committee have in common and have determined to work for in unison.

"As a member of this committee you will be asked to advise with the Department of Military Relief of the American Red Cross in the selection of physicians and surgeons for Red Cross organizations and in the enrolment of the profession.

"It is requested that you advise this office of your acceptance of this appointment.

"Very respectfully,

"J. R. KEAN,
"Colonel, Medical Corps, U. S. Army,
Director General of Military Relief."

One element of great importance is the working out of the units forming base hospitals.

Fourth Base Hospital Unit: Already New York City is thoroughly alive to the situation, public-spirited citizens having furnished the necessary funds for a completely equipped base hospital of 500 beds. This was given to the New York County Chapter of the American Red Cross by Mr. and Mrs. George Blumenthal of that city. This unit will cost $24,000, and will be organized in connection with Mount Sinai Hospital. The staff will be recruited from the surgeons and nurses of the institution, and will consist of twenty surgeons, forty-six nurses and 125 orderlies. Mobilization plans of three units are ready for service, either in the field in time of war, or in the case of extreme emergency at the scene of a great disaster.

Reference Committees

At the conclusion of his address, the President announced the appointment of the following reference committees:

RULES AND ORDER OF BUSINESS

Dwight H. Murray, Chairman.....Syracuse, N. Y.
G. Wythe Cook.....Washington, D. C.
Sol G. Kahn.....Salt Lake City
Jere L. Crock.....Jackson, Tenn.
S. D. Swope.....Deming, N. M.

MEDICAL EDUCATION

L. W. Littig, Chairman.....Davenport, Iowa
A. H. Levings.....Milwaukee, Wis.
William H. Seaman.....New Orleans
Hugh Mackechnie.....Chicago
William S. Lalor.....Trenton, N. J.

LEGISLATION AND POLITICAL ACTION

E. J. Goodwin, Chairman.....St. Louis
H. R. McGraw.....Denver
F. L. Van Sickle.....Olyphant, Pa.
C. P. Meriweather.....Little Rock, Ark.
Charles W. Hannaford.....Portsmouth, N. H.

HYGIENE AND PUBLIC HEALTH

A. T. McCormack, Chairman.....Bowling Green, Ky.
John W. Kerr.....Washington, D. C.
Eugene R. Kelly.....Boston
W. S. Sawhill.....Concordia, Kan.
John A. Ferrell.....North Carolina

CONSTITUTION AND BY-LAWS

Floyd M. Crandall, Chairman.....New York
E. A. Hines.....Seneca, S. C.
Jefferson R. Kean.....U. S. Army
C. L. Stevens.....Athens, Pa.
J. J. McLoone.....Phoenix, Ariz.

REPORT OF OFFICERS

A. R. Mitchell, Chairman.....Lincoln, Neb.
E. R. Stitt.....U. S. Navy, Washington, D. C.
W. E. Anderson.....Farmville, Va.
B. R. McClellan.....Xenia, Ohio
John O. Polak.....Brooklyn

CREDENTIALS

D. Chester Brown, Chairman.....Danbury, Conn.
W. A. Coventry.....Duluth, Minn.
J. H. J. Upham.....Columbus, Ohio
H. E. Randall.....Flint, Mich.
H. P. Newman.....San Diego, Cal.

MISCELLANEOUS BUSINESS

L. J. Hirschman, Chairman.....Detroit
Dean D. Lewis.....Chicago
Floyd W. McRae.....Atlanta, Ga.
Don Palmer.....Seattle, Wash.
A. E. Bulson, Jr.....Fort Wayne, Ind.

The President announced the following Committee on Awards for Scientific Exhibit: John B. Blake, Boston, Chairman; W. T. Williamson, Portland, Ore.; Harlow Brooks, New York.

Reports of Officers

Report of the Secretary

The Secretary presented the following report, which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

For the year 1915-1916, I submit the following report:

ORGANIZATION OF CONSTITUENT ASSOCIATIONS

Constituent Association of	Counties in State: No.	Component Societies in State Assn.: No.	Number Counties in State Not Organized: 1915	1916	Physicians in State (6th Ed. Directory): No.	Number Members of State Association: 1915	1916	A. M. A. in State: No. A. Fellows	Subscribers to Journal in State*: No.
Alabama	67	67	.....	.....	2,569	1,744	1,760	380	217
Arizona	14	11	3	3	307	165	147	129	75
Arkansas	75	66	7	9	2,637	1,169	1,091	354	203
California	59	37	20	20	5,687	2,523	2,703	1,990	899
Colorado	63	23	37	34	1,733	708	811	466	222
Connecticut	8	8	.....	.....	1,678	922	970	529	229
Delaware	3	3	.....	.....	261	107	101	67	21
Dist. Columbia	.....	.....	.....	.....	1,482	559	572	364	224
Florida	52	30	19	20	1,321	530	530	236	168
Georgia	152	84	56	56	3,421	1,757	1,415	573	437
Idaho	37	6	20	20	439	138	133	84	125
Illinois	102	98	0	1	10,648	6,501	5,934	3,791	1,781
Indiana	92	87	3	1	4,872	2,441	2,474	1,147	491
Iowa	99	97	2	2	3,751	2,061	2,186	1,235	507
Kansas	105	70	39	27	2,683	1,323	1,475	798	440
Kentucky	120	117	4	2	3,584	1,813	2,373	838	446
Louisiana	64	40	22	22	2,000	803	821	387	288
Maine	16	14	0	2	1,205	625	717	324	139
Maryland[1]	23	21	2	3	2,292	1,166	1,168	744	472
Massachusetts[2]	14	18	.....	.....	5,869	3,505	3,620	2,094	985
Michigan	83	57	2	2	4,360	2,506	2,892	1,565	588
Minnesota	86	38	3	3	2,447	1,569	1,416	1,128	381
Mississippi	80	48	1	4	2,048	979	1,068	328	178
Missouri[1]	114	98	13	11	6,399	3,053	3,097	1,487	672
Montana	42	14	25	25	636	275	220	201	122
Nebraska	93	56	23	25	1,911	1,047	953	540	312
Nevada	16	3	12	13	154	49	40	55	30
New Hampshire	10	10	.....	.....	660	495	508	325	92
New Jersey	21	21	.....	.....	3,239	1,607	1,673	957	417
New Mexico	26	10	15	16	430	154	185	128	75
New York	62	59	2	2	15,670	7,504	8,191	4,777	2,326
North Carolina	100	79	12	12	2,102	1,216	1,211	404	305
North Dakota	52	13	3	3	586	312	351	278	113
Ohio	88	87	2	1	8,045	3,987	4,388	2,153	1,098
Oklahoma	77	74	3	3	2,634	1,270	1,506	743	287
Oregon	35	13	1	3	1,187	530	560	291	202
Pennsylvania[3]	67	63	4	4	11,502	6,157	6,202	3,808	1,531
Rhode Island[2]	5	6	.....	.....	772	412	417	258	102
South Carolina	44	41	5	3	1,399	755	685	323	159
South Dakota	67	9	7	7	676	317	343	255	159
Tennessee	96	60	33	36	3,457	1,150	1,355	625	710
Texas	250	147	73	70	6,240	3,362	3,450	1,532	637
Utah	28	5	24	23	465	216	266	173	76
Vermont	14	11	.....	.....	668	391	384	165	79
Virginia[4]	100	46	51	51	2,547	1,694	1,775	610	326
Washington	39	20	18	18	1,695	896	825	540	298
West Virginia	55	30	12	12	1,729	842	997	541	245
Wisconsin	71	54	1	0	2,803	1,821	1,816	1,063	456
Wyoming	22	5	17	17	251	119	117	63	52
Canal Zone	.....	.....	.....	.....	97	48	61	30	27
Hawaii	5	.....	.....	.....	162	109	69	30	39
Porto Rico	.....	.....	.....	.....	292	198	115	38	35
Philippine Is.	.....	.....	.....	.....	735	98	94	27	77
Totals	3,013	2,074	586	586	146,527	76,020	78,501	41,005	20,683
Fellows listed at foreign addresses, Honorary and Affiliate Fellows								97	.....
Fellows in government services								1,179	.....
Number on Fellowship roll, May 1, 1916								43,181	.....
Number on mailing list of THE JOURNAL, May 1, 1916								.....	64,200

* Not including Fellows of American Medical Association.

Note.—The number of members of the different associations stated in this table is in accord with the membership of the several associations as they were reported to the Secretary on May 1, 1916.

The lack of an effective uniform system for reporting the membership of the state associations accounts for whatever discrepancies this table shows and detracts from the value of the statement.

Component societies are those societies which compose the state association. A component society may include one county or more.

1. The state of Maryland has 23 counties and the city of Baltimore; Missouri has 114 counties and the city of St. Louis.
2. These state associations are divided into district societies, and these are listed in the table as component societies. Some of these districts are smaller and some larger than the county, the county lines being ignored.
3. Provision is made for the physicians in each of these counties to join the component society in an adjoining county.
4. Virginia has recently adopted the plan of organization and is now establishing component county medical societies.

MEMBERSHIP

The membership of the various constituent state associations, which constitutes the membership of the Association, according to the records in the Secretary's office, May 1, 1916, is shown in the following table:

FELLOWSHIP

The Fellowship of the American Medical Association on May 1, 1915, was 42,366. During the past year, 441 Fellows have died, 1,540 have resigned, 713 have been dropped as not eligible, 658 have been dropped for nonpayment of dues and 17 have been removed from the rolls on account of being reported "not found," making a total of 3,369 names to be deducted from the Fellowship roll. There have been added 4,184 names to the Fellowship roll, of which 3,293 were transferred from the subscription list. The Fellowship of the American Medical Association on May 1, 1916, was 43,181, a net increase for the year of 815.

This gain in the number of Fellows is due largely, as in previous years, to circularizing subscribers to THE JOURNAL who were eligible, urging them to become Fellows.

It becomes necessary to report that the Wyoming State Medical Society is no longer active. No meeting of this constituent state association has been reported for the past three years and a number of Fellows who hold their Fellowship through membership in other constituent state associations and who have moved to Wyoming, write that they have not been able to obtain membership in the constituent association of that state. A number of letters addressed to the secretary of this constituent association have not been answered.

This state of affairs in the organization in Wyoming prompts the suggestion that the House of Delegates refer to the Judicial Council the question of whether or not a more compact organization than that at present defined in Art. IV of the Constitution is advisable, and that the Judicial Council, if it determines a closer affiliation is wise, be instructed to take up the question with the constituent associations. It is suggested, further, that the status of the Wyoming State Medical Society be referred to the Judicial Council with power, at the discretion of this Council, to revive the present organization or to arrange for a new organization of the profession in Wyoming to become the constituent association of the American Medical Association from that state.

Other matters in which the office of the Secretary of the Association has been concerned are reported to the House of Delegates from other sources.

Respectfully submitted.

ALEXANDER R. CRAIG,
Secretary.

Report of the Board of Trustees

Dr. W. T. Councilman, Chairman, read the following report which was referred to the Reference Committee on Reports of Officers:

To the Members of the House of Delegates of the American Medical Association:

During the past year the many activities of the Association have been followed with the usual diligence and with good results. Full reports of all these you will hear through the chairmen of the various councils. Considering the work of the Association as a whole, what it has accomplished in the past and the promise of the future, one is filled with a sense of pride in being a member of the body. This work, while of benefit to the medical profession, extends much wider than this and benefits the nation. It is only by means of the organization of the profession, so that its combined force is at the back of these reforms, that this work is possible. The reforms that have been brought about—notably that of medical education—have come slowly, thus producing no violent disturbances. The manner of procedure has been to acquire full and accurate information of the subjects in hand, to give out

this information, and with this as a basis to proceed. By the reports of chairmen the members are kept fully informed as to details as the work progresses. These reports form valuable contributions to knowledge on the subjects considered. In any review of the progress of education in this country the reports of the Council on Medical Education and the various subsidiary papers and reports proceeding from this must be considered. The same is true of the work of the other councils, particularly that on Health and Public Instruction and that of the Judicial Council. The reports of the chairman of the latter are valuable studies of the relation of the profession to the social state. This relation, which must become ever more important with the advance in social organization, has been fully recognized by your trustees, who this year have granted a considerable sum of money which will be expended mainly in acquiring information.

We are entering on a period of great changes in social organization; a period which will necessitate a far closer organization of the people in all forms of activity, and this particularly calls for united strength in opposing disease. It is true we have not so strongly felt the necessity for this as have other nations, but the time has come when we can no longer resist the social movement, and it is better that we should initiate the necessary changes than have them forced on us. On such information, laws regulating social medicine, which will be just both to the medical profession and to the public, whom it serves, must be based. All of our councils have worked in perfect harmony with other bodies, often outside of the profession, which have had the common good in mind.

The great agent by which all this has been accomplished is our journal. It has furnished the material means; it is the bond of union. Not only this, but medical men cannot afford to be ignorant of the information it conveys. The careful reading of THE JOURNAL will keep a man fully informed of the advance in medical knowledge and give him the stimulus which comes from the relation of research. THE JOURNAL is today the most valuable medical journal in the world, and a profession which it fully represents must be on a high plane. Throughout the entire field of medicine it has been a leader and not a follower. No one can have a prouder monument than this journal will give to the man who has for so many years directed it and under whose fostering care and high ideals it has become what it now is. The Association, as the need for them arose, has also undertaken the publication of journals devoted to more special branches of medicine. These also have been successful and fulfil a useful purpose.

In considering the work of the Association, may we not say that it has accomplished a still higher task, that of uniting the medical profession? There has never been a time when it has been so free from faction. And the great idea on which this unity is based is that of service. No ignoble aim could have accomplished it, and the ideal of service is evident in all the activities of the medical profession as represented by this Association.

PUBLICATIONS

THE JOURNAL

The weekly average of the issue of THE JOURNAL during 1915 was 67,390, which was distributed to 64,859 Fellows and subscribers. The difference between the issue and the subscriptions is accounted for by copies to exchanges, libraries, advertisers and the reserve copies kept on hand for future orders. The receipts for advertising during the year were $204,837.20—an increase over the previous year notwithstanding the fact that the character of the advertisements is carefully scrutinized and all those are rejected which for sufficient reasons seem not to conform to our high standard.

The percentage of physicians in the United States who are receiving THE JOURNAL is 45.3. At first thought it would appear that this was a comparatively small percentage, considering the value of THE JOURNAL and the position it occupies. However, on several occasions pains have been taken to ascertain the number of physicians who read THE JOURNAL, and from the information gathered we can conservatively state that at least 75 per cent. of the physicians of the United States have access to it. As a matter of fact, THE JOURNAL reaches a larger percentage of its clientele and covers its particular field more thoroughly than does any other journal issued for any other class, profession, trade or specialty.

THE ARCHIVES

THE ARCHIVES OF INTERNAL MEDICINE now has on its mailing list 2,053 names, including foreign exchanges, libraries, etc., which shows a net loss as compared with 1914 of twenty-four. This is more than covered, however, by the foreign loss, due to war conditions. There were 958 names added to the mailing list during 1915, and 982 removed. The total number of copies printed during the year, 28,713, was 1,119 less than those printed the previous year.

AMERICAN JOURNAL OF DISEASES OF CHILDREN

On the first of January there were 2,198 names on the mailing list, indicating a loss of fifty-four names, which also is due to the foreign loss. There are 357 physicians who are taking this journal as Fellows of the Association, substituting it for THE JOURNAL, whereas in 1914 there were 263. The total number printed during 1915 was 29,757, or 1,911 more copies than in 1914.

THE AMERICAN MEDICAL DIRECTORY

The American Medical Directory, just off the press, merits more than a passing notice. It is the fifth edition, and as each preceding edition has been improved over its predecessor, so also this one is better than its predecessors. There is a better arrangement of the preliminary matter and greater accuracy in the personal information. Prior to the publication of this edition, a special effort was made to verify the credentials of physicians who graduated abroad, and as a result the information about such physicians is now dependable. By the use of symbols and abbreviations, a large amount of information is included in small space. The European war, however, prevented the use of the specially imported thin paper used in the previous edition. This and the addition of several thousand names have caused an increase in the size of the directory.

We are confident that those who have received the book and have examined it carefully regard it as a credit to the Association, not only because of the character and accuracy of its contents, but also from the mechanical point of view. As with previous editions, all the work on the directory except the binding was done in the Association's own building.

While no edition of the directory has entirely paid for its publication, the fifth edition gives promise of being more nearly self-supporting than the preceding volumes, but it is impossible at the present time to make a financial statement regarding this edition of the directory.

ORGANIZATION WORK

The Association has continued its endeavors to increase the membership of the organization. This work is undertaken only after the assistance of the constituent state association has been secured. With the cooperation of the officers of the state organizations and the officers and members of the component societies, men in the employ of the Association have been sent into certain of the states to solicit subscriptions to THE JOURNAL and Fellowship in the Association, as well as to present the advantages of membership in the organization to physicians of the localities visited. As suggested above, this work has not been undertaken except where it has been agreeable to the officers of the constituent state associations, and when these officers have agreed both to cooperate by assisting the organizers, and to pay a small fee to these organizers for each member who qualifies and whose application is obtained through the efforts of the organizer. The American Medical Association pays the organizers a weekly expense allowance and a salary for the organization work they perform, as well as a percentage on "new business" obtained for the Association. The state associations pay for each new member one half or less than one half of the per capita assessment for the first year received from each new member, while this work costs the American Medical Association practically the first year's return from the "new business" obtained. Where the local officers have counseled with and directed the organizers,

the work has been mutually advantageous; but the success of the endeavor is conditioned on such cooperation.

Cooperative Medical Advertising Bureau

The Cooperative Medical Advertising Bureau is doing a good work. All of the journals owned by the state associations, with the exception of the Illinois journal, are now in this bureau. The bureau, in addition to securing advertisements for the state publications, which during 1915 amounted to $16,830.65, also collects data of all sorts relating to advertisements, giving important information. There was a net loss to the Association through the bureau of $708.30, which is probably more than offset by the indirect gain, and there is a reasonable prospect that the bureau will soon be self-supporting.

Propaganda Department

The Propaganda Department continues its work with regard to medical frauds. The layman's interest in the work is shown by the increasing number of inquiries concerning advertised substances which are received: In 1915, 1,612 such inquiries, as compared with 525 such letters in 1910. Newspapers and magazines also continue to call almost daily for information regarding "patent medicines," and the vigilance committee of the Associated Advertising Clubs of the World is taking advantage of the data this department is able to furnish it. People who advertise are recognizing the fact that for their own protection the advertisements cannot be fraudulent. A paper which habitually fills its columns with glaring announcements of fraudulent articles is not so good a medium for legitimate and honest advertising. There is a growing interest in the subject among educational institutions. State and municipal boards of health, civic organizations, women's clubs, etc., continue to call on the department for information.

Council on Pharmacy and Chemistry

The Council on Pharmacy and Chemistry has continued its work, and has published reports on practically all the widely advertised proprietary mixtures. It is confronted with many difficulties, not the least of which are the questions of radium and the mixed vaccines. Only time can establish the true place of these substances as remedial agents. The little book on "Useful Drugs," which the Council has published, is fulfilling an important purpose and will tend to eliminate the use of the multitude of inert substances which still have a place in pharmacopeias. The committee of the Council on Therapeutic Research has secured the investigation of a number of problems regarding the therapeutic value of many widely used but insufficiently understood drugs. The problems selected for investigation deal with the determination of the clinical action of drugs, and in this way many therapeutic points are being definitely decided.

The work of the Council has reached a stage when little more can be done by the efforts of the Association as a whole; the continuance of the work and the final accomplishment depends on the individual members. There is much evidence that the individual members of the profession are prescribing and using the very substances which as a combined body they condemn, and many of the journals which they support advertise and recommend these substances. There are many reasons for this, and none of them creditable. The first is the financial power of the interests of the manufacturers, and its influence on medical journals. This is a constant positive pressure; that opposing is inconstant and negative. The leading lay publications of the country show cleaner advertising pages than many of the medical journals. The second is due to a credulous order of mind not capable of distinguishing evidence from mere statement, and rendering its possessor an easy victim to the lures of the promoter. The third is indolence, which finds it easier in treating patients to follow advice given in advertisements of proprietary drugs than to undertake the arduous task of ascertaining the condition of the patient and to base thereon a sound scientific, therapeutic treatment. No great progress can be made until the medical profession awakes to the fact that the remedy against fraudulent proprietary medicines lies in its own hands—until the profession resolves to believe rather the evidence which is presented by the scientific investigation of the substances than the biased statements of the agents, whether presented by word of mouth or by advertisements.

Memorial to Congress Regarding Proprietary Medicines

In accordance with your action on the subject of a memorial to Congress regarding "patent" and proprietary medicines, the Trustees appointed a committee consisting of President Rodman, Dr. Alexander Marcy, Dr. George H. Simmons, Dr. Hiram Woods and Dr. Councilman to present the matter to the President. Owing to the death of Dr. Rodman and the illness of Dr. Woods, only three members of the committee could serve. A memorial, which has appeared in THE JOURNAL, was presented.[1] The president seemed interested, and there is prospect that the request for a government investigation will be granted. Such an investigation will lead to a wider knowledge of the matter and possibly some remedial legislation. But even this will not avail unless the individual members of the profession will act on the information obtained. Great assistance in procuring such a commission can be rendered if the members of the House will bring the matter to the attention of their congressmen and urge the measure.

Financial

The report of the finances of the Association continues to be favorable, although this year there is a slight loss instead of a gain. This is due solely to the expenses connected with the lawsuits. A stage has been reached in the contest against "patent medicines" when all the resources and methods of the law backed by almost unlimited means will be invoked by threatened interests. These suits must be met and defended by the Association, and if necessary the other welfare work must be temporarily curtailed. Without the unusual expenses mentioned, the year would have shown a handsome surplus.

Deaths

It is with a feeling of personal sorrow as well as of the great loss which the Association has met that the trustees pay tribute to the character and work of those leaders in the conduct of the affairs of the Association who have died in the past year. Dr. William L. Rodman, the President of the Association and at one time a member of the Board of Trustees, has done work of importance for the medical profession of the country, the last being an endeavor looking toward the formation of a national board of medical examiners. He met with the Board of Trustees at the principal meetings, and his counsel, which was practical and conservative, was of great value. The Association in his death has experienced a loss not easily repaired. Dr. Frank J. Lutz will be remembered by his colleagues as a sincere, able man, kindly in his nature, with a keen sense of humor, conversant with the best literature of the past, always willing to do the work which fell to him. He entered freely into the discussions of the board and his opinions were highly valued. The older members of the board will well remember Dr. Wisner R. Townsend, who for several years was its most efficient secretary; an active, energetic man, who attended well to his duties, bringing to bear on the work an orderly, active and capable intelligence. With this there is also to each member of the board a sense of personal loss. The trustees also wish to pay a tribute to Dr. Henry B. Favill, whose death came just at the time when he was capable of the greatest service to the profession. To the study of the problems of social medicine he brought to bear knowledge derived from close study of the problems, a warm human sympathy, and a rare intelligence. It is sad that he could not live to see the fruition of his work.

Respectfully submitted,

W. T. COUNCILMAN, Chairman.
M. L. HARRIS, Secretary.
THOMAS MCDAVITT.
W. W. GRANT.
OSCAR DOWLING.
PHILIP MARVEL.
PHILIP MILLS JONES.
W. T. SARLES.

1. U. S. Commission to Investigate the Proprietary Medicine Business, THE JOURNAL A. M. A., March 25, 1916, p. 974.

Addenda to Trustees' Report

SUBSCRIPTION DEPARTMENT

The regular weekly issue of THE JOURNAL of the American Medical Association, from Jan. 1, 1915, to Dec. 31, 1915, inclusive, fifty-two issues, was as follows.

January 2	71,840	July 3	63,786		
January 9	64,681	July 10	63,792		
January 16	64,604	July 17	63,583		
January 23	64,746	July 24	63,965		
January 30	64,620	July 31	64,058		
	330,491				319,184
February 6	65,311	August 7	63,891		
February 13	64,724	August 14	63,834		
February 20	62,922	August 21	65,593		
February 27	62,704	August 28	64,011		
	255,661				257,329
March 6	63,674	September 4	64,283		
March 13	63,811	September 11	73,303		
March 20	63,473	September 18	72,704		
March 27	63,379	September 25	72,607		
	254,337				282,897
April 3	63,926	October 2	74,150		
April 10	64,080	October 9	75,191		
April 17	63,694	October 16	76,043		
April 24	63,550	October 23	74,921		
		October 30	71,995		
	255,250				372,300
May 1	63,412	November 6	65,166		
May 8	63,776	November 13	65,092		
May 15	71,770	November 20	76,565		
May 22	64,119	November 27	80,754		
May 29	63,397				
	326,474				287,577
June 5	63,807	December 4	75,850		
June 12	63,383	December 11	81,105		
June 19	63,826	December 18	75,600		
June 26	63,485	December 25	75,873		
	254,401				308,428
Total			3,504,329		
Weekly average			67,390		

PERCENTAGE OF PHYSICIANS RECEIVING THE JOURNAL

This table gives the number of physicians (based on the fourth edition of the American Medical Directory) in the United States, the number receiving THE JOURNAL and the approximate percentage in each state. Copies to physicians in the United States Army, United States Navy, Public Health Service, etc., omitted.

State	Number Receiving JOURNAL	Number of Physicians in State—5th Ed. A. M. Dir.	Approximate Per Cent. 5th Ed. A. M. Dir.
Alabama	638	2,569	25
Arizona	199	307	64
Arkansas	608	2,637	23
California	2,960	5,687	52
Colorado	760	1,733	43
Connecticut	771	1,678	46
Delaware	105	261	40
District of Columbia	598	1,482	40
Florida	446	1,321	41
Georgia	1,037	3,421	30
Idaho	220	439	50
Illinois	5,613	10,648	52
Indiana	1,697	4,872	34
Iowa	1,791	3,751	47
Kansas	1,100	2,683	41
Kentucky	1,137	3,584	37
Louisiana	722	2,060	30
Maine	472	1,205	39
Maryland	1,232	2,292	53
Massachusetts	3,118	5,869	53
Michigan	2,221	4,360	51
Minnesota	1,530	2,447	62
Mississippi	446	2,048	21
Missouri	2,201	6,399	34
Montana	325	636	50
Nebraska	873	1,911	43
Nevada	90	154	58
New Hampshire	420	690	60
New Jersey	1,413	3,239	43
New Mexico	206	430	48
New York	6,892	15,670	43
North Carolina	737	2,102	35
North Dakota	395	586	67
Ohio	3,288	8,045	40
Oklahoma	1,101	2,634	41
Oregon	566	1,187	47
Pennsylvania	5,385	11,502	46
Rhode Island	371	772	48
South Carolina	511	1,399	36
South Dakota	420	676	63
Tennessee	1,096	3,457	31
Texas	2,182	6,240	31
Utah	249	465	53
Vermont	250	668	37
Virginia	961	2,547	37
Washington	815	1,695	48
West Virginia	826	1,729	47
Wisconsin	1,514	2,803	56
Wyoming	123	251	49

The following table shows the number of Fellows and Subscribers for each year commencing with 1900.

Year	Fellows	Subscribers
Jan. 1, 1900	8,445	4,633
Jan. 1, 1901	9,841	8,339
Jan. 1, 1902	11,107	10,795
Jan. 1, 1903	12,553	12,378
Jan. 1, 1904	13,899	14,674
Jan. 1, 1905	17,570	15,698
Jan. 1, 1906	20,826	17,669
Jan. 1, 1907	26,255	20,166
Jan. 1, 1908	29,382	20,880
Jan. 1, 1909	31,999	18,983
Jan. 1, 1910	33,032	19,832
Jan. 1, 1911	33,540	20,504
Jan. 1, 1912	33,250	21,620
Jan. 1, 1913	37,493	19,863
Jan. 1, 1914	41,203	19,751
Jan. 1, 1915	42,956	20,430
Jan. 1, 1916	43,927	22,919

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association for the year ending Dec. 31, 1915.

1915			
Jan. 2—Invested Reserve		$118,832.50	
Certificate of Deposit		20,000.00	
Checking Account		7,301.62	
			$146,134.12
RECEIPTS			
Interest on Invested Reserve	$ 5,175.00		
Interest on Certificate of Deposit	881.66		
Interest on Bank Balance	125.13		
Interest on Uninvested Reserve	52.96		
		$ 6,234.75	
			$152,368.87
SUMMARY OF BALANCE			
Dec. 31—Invested Reserve		$118,832.50	
Uninvested Reserve		5,227.96	
Certificate of Deposit		20,000.00	
Checking Account		8,308.41	
			$152,368.87
DAVIS MEMORIAL FUND			
1915			
Jan. 2—Balance		$ 3,241.82	
Interest		97.97	
Dec. 31—Balance			$ 3,339.79

WM. ALLEN PUSEY, Treasurer.

AUDITOR'S REPORT

MARWICK, MITCHELL, PEAT & CO., CHARTERED ACCOUNTANTS
105 SOUTH LA SALLE STREET

CHICAGO, ILL., Jan. 24, 1916.

To the Board of Trustees of the
American Medical Association, Chicago, Ill.

Dear Sirs:

In accordance with your instructions, we have audited the accounts of the American Medical Association for the year ended Dec. 31, 1915, and now submit our report thereon, together with the following statements:

Exhibits
"A" Balance Sheet as at Dec. 31, 1915.
"B" Income and Profit and Loss Account for the year ended Dec. 31, 1915.

Schedules
"1" Journal Expenses for the year ended Dec. 31, 1915.
"2" Particulars of Provision for Depreciation during the year ended Dec. 31, 1915.

The balance sheet as submitted herewith, Exhibit "A," in our opinion, correctly reflects the financial position of the Association as at Dec. 31, 1915, subject to provision for accrued interest, taxes and Journal subscriptions paid in advance, less subscriptions and memberships due and unpaid.

The following is a condensed comparative balance sheet as at Dec. 31, 1915 and 1914:

ASSETS:	DECEMBER 31 1915	DECEMBER 31 1914	INCREASE	DECREASE
Property and Equipment	$317,685.05	$328,656.60	.....	$10,971.55
Investments	138,832.50	138,832.50	.....	.....
Current and Working Assets	106,148.43	75,849.62	30,298.81	.....
Prepaid Accounts and Reserves	10,233.08	4,794.56	5,438.52	.....
Total Assets	$572,899.06	$548,133.28	$35,737.33	$10,971.55
Liabilities	154,871.52	123,287.59	31,583.93	.....
Surplus	$418,027.54	$424,845.69	$ 4,153.40	$10,971.55

SUMMARY

Assets:		
Increases		$35,737.33
Decreases		10,971.55
Net Increase		$24,765.78
Liabilities:		
Increase		$31,583.93
Surplus Decrease		$ 6,818.15

The net loss for the year ended Dec. 31, 1915, amounted to $2,489.20, particulars of which are shown in Exhibit "B."

The securities representing the investments of the Association were produced for our inspection and found in order.

We verified the cash on hand by actual count and the cash in bank by certificate obtained from the bankers, which we duly reconciled with the cash records.

The following is a summary of the cash on hand and in bank, exclusive of the insurance cash fund, which was verified by certificate obtained from the depository:

Cash on Hand	$ 1,346.85
Cash Fund	50.00
Continental and Commercial National Bank	9,343.44
First Trust and Savings Bank	8,308.41
Total	$19,048.70

EXHIBIT "A"

BALANCE SHEET AS AT DEC. 31, 1915

ASSETS

PROPERTY AND EQUIPMENT AT COST, LESS DEPRECIATION:		
Real Estate and Buildings		$249,498.79
Machinery		43,285.65
Type and Metals		8,117.42
Furniture and Fixtures		13,585.49
Chemical Laboratory		1,612.20
Library		1,585.50
Total Property and Equipment, less Depreciation		$317,685.05
INVESTMENTS:		
Invested Reserve	$118,832.50	
Certificates of Deposit	20,000.00	
		$138,832.50
CURRENT AND WORKING ASSETS:		
Inventory of Materials, Supplies and Work in Progress	$37,568.82	
Accounts Receivable:		
Advertising	$17,254.09	
Reprints	1,538.39	
Miscellaneous	2,054.73	
Cooperative Med. Advertising Bureau.	2,301.87	
	$23,149.08	
Notes Receivable	191.25	
Directory, 5th Edition (Labor and Material)	26,190.58	
Cash in Bank and on Hand	18,998.70	
Office Fund	50.00	
Total Current and Working Assets		$106,148.43
Liability Insurance Fund in Bank		4,776.22
Uninvested Reserve		5,227.96
Prepaid Insurance		228.90
Total		$572,899.06

LIABILITIES

ACCOUNTS PAYABLE:		
Sundry		$ 416.32
General		19,359.92
Cooperative Medical Advertising Bureau		1,836.04
		$ 21,612.28
Advance Payments on Publications		4,422.56
Association Reserve Fund		124,060.46
Liability Insurance Reserve		4,776.22
SURPLUS:		
As at Dec. 31, 1914	$424,845.69	
Less: Adjustments	4,328.95	
	$420,516.74	
Deduct: Loss for year ended Dec. 31, 1915	2,489.20	
		$418,027.54
Total		$572,899.06

EXHIBIT "B"

INCOME AND PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED DEC. 31, 1915

JOURNAL:		
INCOME:		
Fellowship Dues		$ 40,681.42
Subscriptions		254,689.41
Advertising		204,837.20
Jobbing		2,598.75
Books		4,906.50
Reprints		2,873.16
Buttons		97.47
Miscellaneous Sales		4,627.40
Interest		1,298.12
Children's Journal		453.92
Total Income		$517,063.35
EXPENSES:		
As per Schedule "1"	$417,577.48	
Provision for Depreciation—Schedule "2"	16,598.41	
Loss on Bad Debts	2,105.88	
Total Expenses		$436,281.77
Net Income, JOURNAL		$ 80,781.58
ASSOCIATION:		
EXPENSES:		
Propaganda	$ 9,112.70	
Association	28,957.81	
Health and Public Instruction	13,643.75	
Pharmacy, Chemistry and Chemical Laboratory	14,208.27	
Medical Education	8,743.28	
Organization	8,395.72	
Therapeutic Research	1,663.00	
Session 1915	1,793.04	
	$ 86,517.57	

SCHEDULE "1"

JOURNAL EXPENSES FOR THE YEAR ENDED DEC. 31, 1915

Wages and Salaries	$147,949.10
Editorials, News and Reporting	11,427.85
Paper—Journal Stock	115,797.02
Paper—Miscellaneous	3,029.91
Electrotypes	5,278.88
Binding	165.25
Ink	4,012.77
Postage—First Class	18,334.93
Postage—Second Class	27,621.02
Journal Commissions	8,821.82
Collection Commissions	3,473.60
Discounts	4,076.86
Express and Cartage	2,471.18
Exchange	1,706.91
Office Supplies	704.97
Telephone and Telegraph	778.21
Office Jobbing	3,532.11
Miscellaneous	6,753.88
Power	2,636.45
Light	895.84
Fuel	2,116.47
Factory Supplies	4,447.71
Insurance and Taxes	5,366.21
Legal	28,837.63
Repairs and Renewals—Machinery	3,335.76
Building—Maintenance	1,831.71
Archives	465.13
Cooperative Medical Advertising Bureau	708.30
Liability Insurance	1,000.00
Total	$417,577.48

SCHEDULE "2"

PARTICULARS OF PROVISION FOR DEPRECIATION DURING THE YEAR ENDED DEC. 31, 1915

PROPERTY AND EQUIPMENT	RATE	AMOUNT
Building "A"—Old	2.5 per cent.	$ 408.28
Building "B"—New	2.5 per cent.	4,512.10
Machinery	15 per cent.	7,638.65
Furniture and Fixtures	15 per cent.	1,767.54
Factory Fixtures	10 per cent.	396.60
Type	15 per cent.	799.82
Metal	20 per cent.	896.28
Laboratory Equipment	10 per cent.	179.14
Total Depreciation		$16,598.41

We verified the cash disbursements with proper vouchers on file and an exhaustive test of the various sources of income was made.

We found the accounting records to have been maintained in the usual good order.

In conclusion, we beg to express our appreciation of the courtesies extended to us during the course of our examination and to state that we shall be pleased to furnish any additional information that you may desire.

Yours truly,

MARWICK, MITCHELL, PEAT & Co.,
Chartered Accountants.

Report of the Judicial Council

Dr. Alexander Lambert, New York, Chairman, read the report of the Judicial Council which was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

The report follows:

To the Members of the House of Delegates of the American Medical Association:

In presenting its report to the House of Delegates, the Judicial Council desires to call attention to certain amendments to the Constitution and By-Laws which, in its opinion, are advisable both to expedite the increasing volume of business which is necessary to consider in the House of Delegates and to afford greater opportunity to the members of the House of Delegates to take part in the Scientific Assembly of the Association; and also further amendments to separate more clearly the functions of certain officers of the Association.

AMENDMENTS TO CONSTITUTION AND BY-LAWS

As the volume of business coming before the House of Delegates has grown, there has been a growing realization from year to year that the mass of business was having an

undesirable effect in that it crowded, often into hurried discussion, many important matters. The first day of the meeting of the House of Delegates is taken up in receiving reports and in other business, referring this to the various committees; and then, in order that the matters brought before it may be properly digested, considered in committee and brought back to the house for action the house adjourns until the following day. On the following day, in the morning, the General Meeting of the Association takes place, the house not assembling until the afternoon when, at the same time, the sections of the Scientific Assembly begin. The real business of the House of Delegates, therefore, is not finished before the beginning of the Scientific Assembly and really begins coincident with it. This practically prevents any participation of the delegates in the Scientific Assembly and deprives them of one of the main objects for which they would wish to come to the annual session of the American Medical Association. In reality it places a burden on them, at the same time depriving them of certain privileges which they should have the opportunity to enjoy.

There has been a growing feeling among the delegates that this situation should be remedied and that it would best be remedied by pushing forward the meeting of the House of Delegates, bringing the first day on the Saturday before the general meeting of the American Medical Association. This has come up for decision at various times and been voted down. In considering the matter it seems to the Judicial Council that it were wiser to push on to a later day the general meetings of the Association and the first meeting of the Scientific Assembly, that is, that the House of Delegates should continue to meet on Monday and Tuesday, taking two whole days to complete its work, and the Scientific Assembly, opening with the general meeting of the Association, should begin on Wednesday and continue through Friday of the week, breaking up Friday evening instead of Thursday evening, as is now done. Those desiring to come to the Scientific Assembly alone would be present the usual three days, from Wednesday until Friday, instead of from Tuesday until Thursday, and the House of Delegates would be present from Monday until Friday. This seems more desirable than that the delegates should be forced to come on Saturday, wait over Sunday, again meet on Monday, and stay until Thursday. The method here recommended saves twenty-four hours of absence from home duties and does not increase it by twenty-four hours as the former suggested amendments to the By-Laws did. To bring this change about, the following amendments to the By-Laws are necessary and are therefore recommended by the Council:

That in Chapter III, Section 1, the word "day" be stricken out and the words "two days" be substituted, so that the section which now reads: "Regular Sessions.—The House of Delegates shall meet annually on the day preceding the opening of, and at the same place as, the Scientific Assembly of the Association," shall read:

"The House of Delegates shall meet annually on the two days preceding the opening of, and at the same place as, the Scientific Assembly of the Association."

This would assign the general meeting of the Association to Wednesday and would throw the election of the officers of the Association in the House of Delegates to Friday afternoon, for Chapter IV, Section 3 of the By-Laws reads, "The election of officers shall be the first order of business of the House of Delegates after the reading of the minutes on the afternoon of the third day of the Scientific Assembly." There is nothing at present in the Constitution and By-Laws which fixes the first day of the Scientific Assembly on Tuesday. The Constitution and By-Laws wisely has given to the Board of Trustees full power to control all arrangements for the annual sessions of the Association, as in the By-Laws Chapter VI, Section 2. All elections and time of the meetings are designated in the By-Laws as being required to be held on the first, second, or third days of the meetings of the Scientific Assembly. The following further amendment to the By-Laws is, however, necessary:

In Chapter II, Section 2, the limit of time for introduction of new business into the House of Delegates is designated as follows: "No new business shall be introduced into the House of Delegates after the second day of the Scientific Assembly (third day of the House of Delegates), unless with unanimous consent," etc. It is therefore recommended that this By-Law shall be changed to read:

"No new business shall be introduced in the House of Delegates after the second day of the annual session of the House of Delegates unless by unanimous consent; and such new business, so presented, whether in the form of a motion, resolution or memorial, shall require a two-thirds affirmative vote for adoption; provided, however, that unless otherwise provided in these By-Laws, new business referred to the House of Delegates by the officers of the sections or by formal action of the sections themselves may be presented to the House of Delegates any time preceding the meeting at which the election of officers takes place."

ELECTION OF A SPEAKER

At various times in the past few years there has come up the question of the election of a speaker for the House of Delegates, and with it necessarily the election of a speaker pro tem. as a possible substitute. In the second year of the existence of the Judicial Council this matter was referred to it for decision. The Council was unwilling at that time to decide the question and reported it back to the House of Delegates for its own decision, the house at that time deciding against it. Since then each year has emphasized the desirability, if not the necessity, of having a presiding officer who shall be familiar with the transaction of the business of the House of Delegates and be familiar with the business that recurs year after year, and one who may also be familiar with the best methods of expediting business in the house. There has been a growing conviction among many delegates that a great deal of time was unconsciously and unavoidably wasted in the House of Delegates in the transaction of its business. The Judicial Council, therefore recommends to the House of Delegates that it take up the question of the election of a speaker of the house. This requires a change of the Constitution, if the speaker of the House of Delegates shall be put under the general officers of the Association, and to Section 1, Article 9 of the Constitution there should be added the words "a Chairman of the House of Delegates," so that the section shall read:

"The general officers of this Association shall be a President, four Vice Presidents, a Secretary, a Treasurer, and a Chairman of the House of Delegates."

At the San Francisco session an amendment to this effect was submitted, so it is within the power of the House of Delegates to act on this matter at this session. The Council would also recommend that a new section be inserted under Chapter IV of the By-Laws to read as follows:

"Section 2. The House of Delegates shall annually elect a Chairman and a Vice Chairman, these officers to serve for one year, or until their successors are elected and installed. These officers must be Fellows of the American Medical Association and must have been Fellows of this Association for at least the two years immediately preceding their election to this office. They need not, however, be members of the House of Delegates, but they shall possess all powers of the presiding officer of this parliamentary body. These elections shall follow the election of the treasurer of the Association."

If this is adopted, the Council also recommends the renumbering of the present sections under Chapter IV.

One objection which was formerly brought against the election of a speaker of the House of Delegates was that the speaker would necessarily be elected by the house which preceded the one over which he was to preside. This objection is more theoretical than practical, for each House of Delegates is now presided over by two presidents neither of whom was elected by the house over which he presides. Moreover, at each session of the House of Delegates a still more incongruous situation is in vogue. One president nominates all the reference committees of the house to do the work of the house, nominating whom he chooses and rightly so, so far as he is concerned, but the president, through whose term of service all the active business must be done, has no voice in naming the reference committees with which he must work. Section V, Chapter 4, now reads: "The General Officers of the

Association, except the President, shall assume their duties at the close of the last meeting of the annual session at which they are elected," and Section 6, "The President shall be installed at the general meeting of the annual session following that at which he was elected."

APPELLATE JURISDICTION OF JUDICIAL COUNCIL

At the Atlantic City session of 1914 the Judicial Council made the recommendation that it be given certain appellate jurisdiction as follows: "In all cases which arise between a constituent association and one of its component county societies, between component county societies of the same constituent state association, between a member of a constituent state association and the component society to which said member belongs, and between members of different component societies of the same constituent state association, the Judicial Council of the American Medical Association shall have appellate jurisdiction." This was laid on the table and referred back to the various constituent state associations for consideration and action before it should be finally passed on by the House of Delegates of the American Medical Association. It was not brought up for action in San Francisco in 1915.

This recommendation as it stands at present is, in the opinion of the Judicial Council, too broad, because it refers to all cases, both of law and procedure, and also to all cases of fact. In the opinion of the Judicial Council it should be limited to cases of law and procedure and the question of the settlement of facts should not be brought before it. This reopening of questions of fact before the Judicial Council is, in its opinion, very undesirable, because it means the opening of the entire details of the cases brought before it and the going over and the reiteration of evidence already brought out before the councils or the censors of the constituent state associations or the county societies composing them. Such questions of fact are best considered and decided in the places where differences of opinion concerning them have arisen. They are best decided where knowledge of the credibility of the witnesses can be best appreciated. Questions of fact should be considered and decided before being brought to the Judicial Council. The questions, however, that come up as to whether or not an aggrieved member has obtained the justice which he sought, or whether or not a just decision has been reached in the matter of law or procedure between societies and individuals, may well be a question which can be appealed from the decision of the first courts which decided it.

The Judicial Council does not bring this before the House of Delegates with any desire to obtain new power or more power than it now has. The Council believes that the House of Delegates intends and desires that the Judicial Council shall be a dignified court to which disputes may be referred for decision, but as at present constituted, the Judicial Council has only original jurisdiction within clearly limited fields. There is no question that at present it has only the power and half the functions which a final court of decision should possess; that is, there is no mechanism by which appeals may come up from the constituent state associations to it. It has already been forced on certain occasions to ask as a favor the reconsideration of cases by state associations which, in an appeal, would naturally have come to the Council if it had had appellate powers. Thus it can be readily appreciated by the House of Delegates that responsibilities are demanded of the Judicial Council and thrown upon it without adequate authority to deal with these responsibilities. The position of having responsibility without authority has been forced upon it. Such a situation places the Judicial Council in a false and undignified position, which the Council believes the House of Delegates should remedy.

ELIGIBILITY OF PRESIDENT

The question of whether or not a member of the Board of Trustees is eligible under the existing Constitution and By-Laws to election to the office of president or vice president during his term of office as trustee came up at the meeting in San Francisco. This question created such a wide difference of opinion that it was very evident it was not clearly stated in the Constitution and By-Laws whether or not a trustee was thus eligible. A question such as this cannot recur without detriment to the harmony and welfare of the American Medical Association. The Judicial Council believes, therefore, that it should be definitely decided and that positive statements thereon should be inserted in the Constitution and By-Laws and should be brought before the House of Delegates for its decision.

The greatest honor that the Association can pay to any member is to elect him president, and during the tenure of his office a president should be permitted to give his entire time to the honorable and honorary duties of his office in presiding at general meetings, in nominating for the consideration of the House of Delegates such candidates for election on the councils and various bodies that are to be confirmed by election of the House of Delegates. During the annual session of the Association he should be relieved of the hard work and often wearisome duties of presiding in the House of Delegates and should be able to devote his time to the social and scientific side of the meetings. Between the annual meetings of the Association it would seem wise that it should be part of the duties of the president to become familiar with all the varied activities of the American Medical Association. The Board of Trustees always extends an invitation to the president to be present at the meetings of the board. By attending these meetings the president can familiarize himself with the work the Association is doing.

A place on the Board of Trustees is a very honorable position. It is particularly honorable because with it goes the responsibility of the care and management of all the activities of the Association. The Constitution wisely provides for the election of trustees for a term of three years. A term of some years is necessary to obtain the best services from any trustee. It requires continuous tenure of office to give the best service to the Association and often for these reasons a trustee is continued in office for several terms. After the House of Delegates has bestowed its confidence upon any individual by honoring him with the position of trustee for a definite term of years, and he has accepted the same, it would seem wise that he should fulfil the expectations of serving out his term of years with which the House of Delegates has honored him. The Judicial Council would recommend that Article X, Section 2, of the Constitution be amended by adding to the section, as it now reads, the following:

"No trustee shall be eligible to any other elective office the term of which runs concurrently with the term for which the said trustee has been elected."

It would seem wiser to reiterate in the By-Laws by adding to Section 2, Chapter IV, the following:

"No member of the House of Delegates shall be eligible to the office of president or vice-president, nor shall a member of the Board of Trustees be eligible for election to any other elective office the term of which runs concurrently with the term for which the said trustee has been elected."

The Judicial Council calls the attention of the House of Delegates to the report of the Committee on Social Insurance of the Council on Health and Public Instruction. This Committee on Social Insurance coordinates the consideration of this subject which has been given by both Councils.

Respectfully submitted.

ALEXANDER LAMBERT, Chairman,
JAMES E. MOORE,
HUBERT WORK,
A. B. COOKE,
RANDOLPH WINSLOW,
ALEXANDER R. CRAIG, Secretary.

Report of Council on Health and Public Instruction

Dr. H. M. Bracken, Minnesota, temporary chairman, read the report of the Council on Health and Public Instruction which was referred to the Reference Committee on Legislation and Political Action.

The report follows:

To the Members of the House of Delegates of the American Medical Association:

The Council on Health and Public Instruction has, during the past year, suffered the greatest loss that could possibly befall it. The death of the chairman, Dr. Henry B. Favill, Feb. 20, 1916, not only deprived the Council of its chairman

and its chief inspiration, but also deprived the American Medical Association of one of its strongest, most effective and valuable members, and the medical profession of the country of one of its finest representatives. It is impossible to express adequately the loss which we have sustained. In order that a proper appreciation of the life, character and professional activities of Dr. Favill may appear on the records of the Association, the Council requests that a committee be appointed to draft suitable resolutions for adoption by the House of Delegates.

The work of the Council during the past year has differed from that of previous years in that many of the plans which have been under consideration and development in the last five years have this year produced definite results, while the formulation of new plans and activities has been somewhat checked, for the time being, by reason of the necessarily limited appropriation made for the Council's work this year, and by the amount of time required on the part of all those officially connected with the Association to look after the details of the libel suit now pending in the courts.

The Council is endeavoring to develop the program outlined in 1914 and reaffirmed in 1915. This program includes:

1. A thorough investigation of present public health conditions in the United States with a view to securing more accurate information on all phases of the public health program than is now available.

2. Education of the public by every possible means in order that the people may understand the enormous advances in scientific medical knowledge during the last generation and the possibility of utilizing such knowledge in the prevention of disease, the reduction of the death rate and the prolongation of human life.

3. The crystallizing of such educated public sentiment in necessary public health laws, regulations and ordinances which will render possible a conservation of human life, commensurate with our advancing knowledge, and which will render such laws more effective through an educated and enlightened public opinion.

Investigation of Present Public Health Conditions

As stated in previous reports, this subject naturally divides itself into four parts, namely, the investigation of federal health activities, state health activities, municipal health activities and voluntary public health activities carried on by independent organizations. In two of these subdivisions, distinct progress has been made by the Council during the last year. The other two, while of equal importance, have not as yet been developed, for reasons which will be apparent.

1. The study of federal public health activities and the inauguration of a survey of the work being done by the different departments of the federal government for public health are still under consideration. A tentative plan has been formulated for carrying on this work which it is hoped can be developed during the next year.

2. The survey of state public health activities made in 1914 by Dr. Charles V. Chapin, commissioner of health of Providence, R. I., as a special representative of the Council, has been summarized in a comprehensive report by Dr. Chapin, including a rating sheet of the forty-eight state health organizations and exhaustive tabulations of their various activities, appropriations, expenditures, etc. This report, submitted to the Council by Dr. Chapin, was ordered published. A preliminary edition of 1,000 copies was issued in February and distributed shortly before the midwinter conference to members of state boards of health and officers of the Association. The first edition was distributed largely for the purpose of securing suggestions and criticisms. Communications on various phases of the report have been received from twenty-three states. These have been referred to the members of the Council and to Dr. Chapin for consideration, and will be taken up in detail at the meeting of the Council to be held during the Detroit session. It is probable that the Council will order a revised edition for general circulation.

The survey of Dr. Chapin and the publication of this report will, it is hoped, mark the beginning of as distinct a movement in the public health field as the first report and classification of medical colleges by the Council on Medical Education inaugurated in the educational field. The situation is, in many ways, identical. Neither the Council nor Dr. Chapin as its representative has, or possibly could have, the slightest authority. All that we can do is to secure the facts regarding the work being done in each state, and so far as possible tabulate and summarize these facts so as to arrive at some kind of average or standard which can be used for the purpose of grading the work in different states so as to institute a comparison that will be not only illuminating but also stimulating. Prior to the publication of Dr. Chapin's report, there was no possible way in which the public health work being done in different states could be compared and estimated. It is now forty-seven years since Massachusetts in 1869 established the first state board of health. Each state has followed its own ideas and inclinations in establishing and developing its state public health work. It is today impossible to determine, except in terms of individual opinion, what is the ideal or desirable form of state public health organization, what such an organization should include, how many men are required to conduct it, or what should be its cost. For states like Nevada, Montana, Arizona and New Mexico to undertake to model their state public health organization on the same plan as that of New York and Pennsylvania is manifestly absurd. It is impossible to say how many men an adequately organized state health department should have, how many of them should be full time men, what equipment such a department should have, what relation it should bear to local or county health administration, and how much it should cost the people of the state, either totally or on a per capita estimation. It is also impossible to determine whether, for the amount that is being spent, the people of any state are getting value received for their money or how near they are coming to such a realization. Dr. Chapin's study of this entire field is the first effort that has been made to obtain a comprehensive view of the entire subject. Necessarily limited as to time and funds, the survey and the report have already proved of the greatest value and interest to those interested in state public health work. This interest will increase with the publication of a larger revised edition of the report. Through the rating sheet, which is the summing up of the entire report, it is possible to compare the work done in any state with that done in any of the other forty-seven, not only as to the total value of such work, but also on each of twenty different points. This makes it possible not only to compare state with state, but also to say wherein each state excels or is deficient in each detail. The Council hopes at the end of two or three years to make another survey for confirmatory and comparative purposes, the second survey to be used as a basis for classification of the states according to the character of the public health work being done, somewhat along the same lines as the classification by the Council on Medical Education of medical schools into A, B and C classes.

3. As stated in last year's report, the Council has been desirous of inaugurating a survey of municipal public health work similar to that made by Dr. Chapin in state public health work, but so far has been unable to devise any feasible plan for this purpose. The same situation is manifest in the municipal field. Practically all of our leading cities and many of the smaller ones have during the past twenty-five years established some kind of municipal health organization, either through definite organization or by slow development. The form which this organization has taken, however, has been largely accidental or determined by the views of those responsible for the organization or administration of each individual local department. In many of our cities, there are today local health organizations that are completely manned and equipped and giving excellent and efficient services to the people for the protection of the public health. On the other hand, there are many local public health organizations which exist on paper only, which consist of so-called health officers without adequate training, owing their appointment to political influence, drawing in some cases ridiculously small salaries for an indefinite amount of services, having no adequate machinery or properly equipped laboratories to carry on their work, and entirely unable to protect their community against disease. Not only is it impossible to say what are

today the actual facts regarding municipal health work, but it is equally impossible with the data at our disposal to determine what should be the ideal conditions. During the past year, the secretary has received a number of requests for information and advice as to what kind of a health department should be organized in a town of a given size, how many men would be required, how much should be spent for equipment, and how large an appropriation should be made to cover the annual cost of operation. These questions cannot be answered definitely at present. During the coming year the Council hopes to make a definite study of this problem and to present a report which will show what is actually being done in municipal health work, how much it is costing, and what kind of health organization should be established for cities of different sizes.

4. In the fourth field of investigation, that of voluntary public health organizations, the report of the Central Committee on Public Health Organization, referred to in our report for 1915, was published in pamphlet form in the fall. Two editions have been printed and distributed, and the supply is practically exhausted. This pamphlet, containing the tabulated reports of forty-six voluntary public health organizations, was immediately accepted as authoritative and has been in great demand. At the Rochester meeting of the American Public Health Association, held in September, 1915, a conference of executive officers of voluntary public health organizations was held, at which the Central Committee presented its report. After general discussion, the report was accepted and the committee discharged and a new Committee on Coordination created with power to act. This committee consists of Dr. Charles J. Hatfield, Philadelphia, secretary of the National Association for the Study and Prevention of Tuberculosis; Prof. Selskar M. Gunn of Boston, secretary of the American Public Health Association; Dr. W. F. Snow of New York City, executive secretary of the American Social Hygiene Association; Mr. Curtis E. Lakeman of New York City, secretary of the American Association for the Control of Cancer, and Dr. Frederick R. Green, secretary of the Council. This committee has had two meetings since its appointment, and is carrying on a discussion by correspondence as to the best means of promoting cooperation between existing organizations. The proposition for a joint meeting of all the organizations interested in connection with the 1916 session of the American Medical Association could not be carried out. The efforts of the Council during the last three years in the direction of cooperation, however, have borne fruits in the cultivation of a spirit of cooperation among many of the leading organizations to an extent that amply justifies the efforts that have been made. The death of Dr. Favill and the necessity of taking up other lines of work for the time being have prevented the further development of this plan, but we hope that, during the coming year, further efforts in this direction may be undertaken.

PUBLIC EDUCATION

PRESS BULLETIN

The *Press Bulletin* was published regularly during the latter part of 1915. Since the first of January, 1916, however, the bulletin has been temporarily suspended, owing partly to the necessity of overhauling and revising the mailing list and changing the form of the bulletin, but principally to the fact that the secretary's time and efforts have been necessarily diverted into other channels.

SPEAKERS' BUREAU

Owing to the limited appropriation given to the Council this year, the secretary recommended to the Council at its October meeting that the Speakers' Bureau be put on a self-supporting basis, namely, that the local organization and committees asking for speakers be asked to pay the actual traveling expenses and entertainment of the speaker. This recommendation was made for several reasons. It has been apparent for several years past that the amount of money available for the payment of speakers' expenses would be at best entirely inadequate for the amount of work which should be done. If this work had been pushed during the last five years, it would be possible to use practically all of the available surplus of the Association each year in supplying speakers for local public health meetings. This is manifestly impossible. It is equally impossible for the Council to use any large portion of its appropriation for this purpose. If only one or two thousand dollars a year can be spent in this work, the amount available would generally be completely exhausted in the first six months of the year, leaving nothing for the remainder of the year, and at best it would be possible by such a plan to provide only a small portion of the speakers asked for and desired. In a word, for the Council to attempt to finance a speakers' bureau, which would cover the entire country, would mean either that it would need a very large appropriation for this purpose or that it would be compelled to limit its work in this direction to the very narrow boundaries of a small appropriation. On the other hand, if the bureau is made self-supporting, there is no limit to the extent to which it can be developed.

The Council approving of this proposition, it was necessary to revise and reprint the speakers' list, also to advise each one of the 250 speakers on the list that the plan of operation had been changed and to secure his consent to fill appointments under the new plan. This has been done during the winter. Early in the summer it is hoped that we can issue a new announcement which can be distributed in large numbers throughout the country.

PAMPHLETS

The most marked development of the past year in the educational work of the Council has been the number and variety of pamphlets on different subjects printed and distributed by the Council. The list in Table 1 will show the number

TABLE 1.—NUMBER AND CHARACTER OF PAMPHLETS PRINTED AND DISTRIBUTED, JUNE 1, 1915, TO MAY 16, 1916

Defense of Research, Pamphlet XXVIII. "Biological Research: Its Value and Dangers"	2,000
Report of the Committee on Conservation of Vision, 1915	1,000
Conservation of Vision, Pamphlet I. "Schoolchildren's Eyes".	1,000
Conservation of Vision, Pamphlet III. "Wearing Glasses"	1,000
Conservation of Vision, Pamphlet IV. "The Relation of Illumination to Visual Efficiency"	1,000
Conservation of Vision, Pamphlet V. "Trachoma in Eastern Kentucky"	1,000
Conservation of Vision, Pamphlet VI. "Auto-Intoxication and the Eye"	1,000
Conservation of Vision, Pamphlet VII. "Eye-Strain"	1,000
Conservation of Vision, Pamphlet XII. "Ordinary Eye Diseases"	1,000
Conservation of Vision, Pamphlet XIV. "Visual Requirements of Transportation Employees"	1,000
Conservation of Vision, Pamphlet XVI. "How Whisky, Tobacco and Drugs Affect the Eyes"	1,000
Conservation of Vision, Pamphlet XVII. "Oculists and Opticians"	1,500
Conservation of Vision, Pamphlet XVIII. "Preparations for the Oncoming of Blindness"	1,000
Conservation of Vision, Pamphlet XIX. "What to Do for Blind Children"	1,000
Conservation of Vision, Pamphlet XX. "Blindness from Wood Alcohol"	1,000
Prevention of Cancer, Pamphlet VIII. "What Every Woman Should Know About the Breast"	7,000
Sex Hygiene. "Margaret, the Doctor's Daughter"	6,000
Sex Hygiene. "Life Problems"	6,000
Sex Hygiene. "John's Vacation"	6,000
Sex Hygiene. "Chums"	5,000
TABLE 1—(*Continued*)	
Public Health. "Baby Welfare"	4,100
Public Health. "Hookworm"	1,000
Public Health. "House-Fly"	2,600
Public Health. "Measles"	3,500
Public Health. "Pure Water"	500
Public Health. "Scarlet Fever"	6,500
Public Health. "Small-Pox"	1,000
Public Health. "Tuberculosis"	8,100
Public Health. "Typhoid Fever"	6,100
"Save the Babies"	281,000
"Baby Health Conferences"	6,000
"Minimum Health Requirements for Rural Schools"	750,000
"The Present Condition of Public Health Organization in the United States"	1,500
Sample pages, "Regulation of the Practice of Medicine"	1,000
"Regulation of the Practice of Medicine"	1,000
"The Public and the Medical Profession"	1,000
"A Report on State Public Health Work"	1,000
"What Is Chiropractic?"	2,000
"Facts for the Tuberculous"	500
"Public Health Cartoon Prints"	2,600
"An Outline for a Study Course on Public Health" (for women's clubs)	3,000
"Some Essentials to the Development of Efficient Health"	1,000
"State Regulation of the Practice of Medicine"	1,000
"State Health Organization"	1,000
Total	1,133,500
Score Cards	55,000
Grand total	1,188,500

and character of such pamphlets printed and distributed from May 22, 1915, to May 16, 1916.

The largest two items on this list require some explanation. The pamphlet on "Minimum Health Requirements for Rural Schools" printed last year was the first of a series of four pamphlets prepared by the Committee on Health Problems in the Public Schools appointed jointly with the National Educational Association. As last year's report shows, 55,000 of these pamphlets were printed, of which 40,000 were sent to Hon. P. P. Claxton, the federal commissioner of education, for distribution through his bureau. At the meeting of the National Council of the National Educational Association, held in Cincinnati, Feb. 23, 1915, it was agreed that the widespread distribution of this pamphlet was the most important single work to be undertaken by the committee. Dr. Claxton asked for an edition of 750,000 at an estimated cost of $3,000. The publication of this large edition was made possible through the generosity of the Elizabeth McCormick Memorial Fund of Chicago, as stated in last year's report. Following the San Francisco session, the preparation of this edition was undertaken, and by the last of December, 1915, the entire edition of three quarters of a million pamphlets had been printed, bound, addressed and mailed to every rural schoolteacher and rural school board member throughout the country, as well as to every state and county superintendent of education and every state normal school. The addressing and franking was done through the federal Bureau of Education.

This work is a striking example of the value of intelligent cooperation between various organizations interested in the same line of work. The pamphlet was prepared by a joint committee of the American Medical Association and the National Educational Association. The funds for printing an edition of three quarters of a million copies were supplied by the Elizabeth McCormick Memorial Fund of Chicago, and the addressing and distributing was done through the federal Bureau of Education. In this way, at an actual expense of $3,000, 750,000 pamphlets were placed in the hands of those most interested in the problem of rural school conditions and those most capable of remedying conditions.

The second instance of cooperation is to be found in the printing and distribution of 281,000 copies of the "Save the Babies" pamphlet. This pamphlet, originally issued by the Committee on Women and Children's Welfare, as an adjunct of baby health conferences, has proved exceedingly popular, and has created a demand for itself far in excess of the original plan. Here again, the problem of cost enters into the situation, but in this instance this difficulty was solved in an unexpected manner. Mr. G. F. Earnshaw of the Earnshaw Knitting Company, Chicago, a firm engaged partly in the manufacture of children's garments, became greatly interested in the entire problem of child conservation, and suggested the possibility of utilizing the dry-goods stores of the country in a systematic campaign for the education of mothers. This plan was suggested too late in the year to permit of full development in time to coincide with the proposed Baby Week of the federal Bureau for Child Welfare. Owing to the short amount of time available as well as the expense involved, it was not possible for the Council to take up Mr. Earnshaw's first proposition, namely, that the Speakers' Bureau of the Council furnish speakers on public health for mothers' meetings to be held in all the large dry-goods stores during the proposed Baby Week. The secretary, however, offered to bring the local dry-goods men and the officers of the local medical organizations into communication with each other and to turn over to the local societies in each case the task of furnishing speakers for these meetings. This was done in a large number of instances.

In twenty-nine cities, cooperation was established between the dry goods stores and the local medical organizations; the medical society furnished speakers, and the dry goods stores furnished a meeting place and advertised the meetings to the public. Women and especially mothers were urged to attend. In some cities, meetings were held daily or twice a day. In seven other cities, meetings were held by the local dry goods stores, and addresses made by speakers selected by the proprietors. In a number of cases, baby health conferences, children's clinics and health exhibits were held in connection with the baby week observances. Cooperation was established not only with local medical societies, but also with local health departments, public schools, public libraries, commercial clubs, trained nurses' organizations, day nurseries, hospitals and other philanthropic organizations. Over 200,000 copies of the "Save the Babies" pamphlet were sold to dry goods stores for free distribution to mothers. The cooperation shown in working out this plan has been most gratifying, and the possibilities of further development in succeeding years are encouraging.

Attention should also be called to the nine public health pamphlets prepared and printed for the use of state boards of health. Of these, over 30,000 have been printed and distributed during the past year. Further additions to this series are in preparation.

WORK OF THE MEDICOLEGAL BUREAU FOR THE YEAR ENDING MAY, 1916

During the past year, work on the three digests, as mentioned in the report for the year ending May, 1915, has been in progress. These are the digest of the Supreme Court decisions on the medicolegal relation of physicians, the digest of Supreme Court decisions with reference to malpractice, and the digest of Supreme Court decisions on the powers and duties of state boards of health. The first of these digests is about half completed, 874 cases out of a total of 1,697 having been abstracted and cited. This digest covers the personal rights and liabilities of physicians for personal injuries, exclusive of malpractice, crimes and contract; physicians as witnesses, and miscellaneous medicolegal relations of physicians, chiefly statutory. On the subject of professional malpractice we had on hand at the last report 261 cases; these have been added to. It is estimated that there are between 1,200 and 1,500 cases on record on this subject. On the powers and duties of state boards of health there are 396 decisions on hand and abstracted, 100 decisions which have not as yet been abstracted, and 256 citations for which we have not as yet been able to secure the decisions, making a total of 752 cases under this head. These have been materially added to since the last report, making approximately 800 cases in all.

During the current year, approximately eighty-nine inquiries have been received and answered on medicolegal subjects.

These inquiries embrace requests for information as to the liability of physicians in contract and malpractice, and various miscellaneous subjects, such as advertising, anesthetist's fees, powers and duties of medical examiners, obligation resting on physicians to care for patients, laws affecting Christian Scientists, chiropractors and other cults, embalming, fee-splitting, use of narcotics, marriage, sterilization, midwifery, mental defectives, nurse registration, pharmacists, ownership of Roentgen-ray plates, vital statistics, and miscellaneous inquiries in regard to nuisances and public health in general.

LEGISLATION

FEDERAL

Quite a number of laws have been introduced into Congress during the past winter touching on public health matters and of interest to physicians. To date none of these have passed excepting a bill providing for the national control of leprosy.

STATE

During the past winter the legislatures in ten states have been in session. The following summary shows the principal legislation as far as it has been reported up to the time of drafting this report:

Ten states have been in session, and of these from the reports so far received, five have adjourned. Laws have been enacted as follows:

KENTUCKY: Adjourned. Laws limiting the right to bring an action for malpractice to one year; providing penalties for fee-splitting; forbidding illegal advertising, and regulating the sale and manufacture of food supplies.

LOUISIANA: Still in session.

MARYLAND: Adjourned. A law increasing the appropriation for the state department of health, $18,000, and Johns Hopkins University, $15,000.

MASSACHUSETTS: Still in session. Measures have been enacted amending the drug laws, the laws specifying the duties of local boards of health, the law for the care of tuberculous cases and regulating the stamping and labeling of receptacles for food and the like.

MISSISSIPPI: Adjourned. Laws were passed increasing the appropriation for the state health department from $23,000 to $32,000 annually; establishing a sanatorium for the care of incipient tuberculous patients, and one for the prevention of blindness.

NEW JERSEY: Still in session.

NEW YORK: Still in session. A measure transferring the state quarantine to the federal government has been passed.

RHODE ISLAND: Adjourned. No report.

SOUTH CAROLINA: Still in session.

VIRGINIA: Adjourned. Laws were enacted to provide for the control of potable waters, authorizing counties and cities to establish tuberculosis sanatoriums; to restrain persons suffering from tuberculosis; providing fees and maintaining indigent consumptives; amending the law defining the powers and duties of the state board of health, and prohibiting the use of roller towels.

NEW COMMITTEES

November 11, the secretary received from Dr. John B. Andrews, secretary of the American Association for Labor Legislation, a pamphlet containing a tentative draft of a model bill for industrial insurance, together with an editorial for publication in THE JOURNAL and the *Press Bulletin*. In this tentative bill, the provisions regarding medical services were intentionally omitted in order that this entire question might be taken up by the representatives of the organized medical profession and properly discussed. Realizing the importance of this subject to the physicians of the country, and knowing that these questions had been practically ignored in the passage of the national insurance acts in Germany, England, Denmark, Norway and other European countries, the secretary at once wrote to Dr. Andrews proposing the appointment of a committee to represent the American Medical Association and to work with him in the elaboration of the details of the model bill affecting physicians. A cordial reply was at once received from Dr. Andrews, stating that he would be very glad to have such a committee appointed. After discussion with the chairman and Dr. Craig and some correspondence with Dr. Alexander Lambert, it seemed obvious that this entire question, being both an ethical and an economic one, should be in the hands of a committee that would be recognized as representative and authoritative. The Judicial Council has no authority under the by-laws to appoint committees, while our Council has such authority. The secretary, therefore, proposed to Dr. Favill and Dr. Lambert that the Council on Health and Public Instruction appoint a Committee on Industrial Insurance to consist of Dr. Alexander Lambert, chairman of the Judicial Council, as chairman; Dr. Henry B. Favill, and a third member to be selected by Dr. Lambert, who could cooperate with him in New York. After some correspondence, Dr. Lambert suggested Dr. Frederic J. Cotton of Boston, and in accordance with this recommendation, the chairman appointed such a committee. This action was confirmed by the Council, and the committee appointed. The death of Dr. Favill makes a vacancy on the committee which will be filled in the near future. Dr. Lambert as chairman of the committee has secured the services of Dr. I. M. Rubinow of New York as the executive secretary of the committee, has established headquarters, has begun the collection of material on social insurance, and is now prepared to make an exhaustive and authoritative study of the subject for the benefit of the Association and its members. The Council urgently recommends that the House of Delegates request all state and local organizations to suspend action on this important subject until the special committee has formulated a definite platform on which the United States medical profession can stand, and a definite program for looking after the interests of physicians in this work. The details of the work of the committee will be found in the special report by Dr. Lambert.

STANDARD STUDY PROGRAM FOR WOMEN'S CLUBS

In 1913, at the annual meeting of the Conference of State and Provincial Boards of Health, Dr. S. J. Crumbine, secretary of the State Board of Health of Kansas, presented a program which he had prepared at the request of the women's clubs of Topeka, consisting of study outlines for eighteen meetings of the club to be devoted to the study of public health. This program proved so popular that in a short time Dr. Crumbine received requests for it from clubs in all parts of the state. Impressed with the value of this method of public education, he recommended, as president of the Conference of State and Provincial Boards, that a committee be appointed to prepare a standard program for those women's clubs desiring to take up the systematic study of public health conditions. This recommendation being approved, the committee was appointed, consisting of Dr. Crumbine, Dr. J. N. Hurty of Indiana, and the secretary of the Council. In 1914, at the biennial meeting of the General Federation of Women's Clubs, this subject was discussed with Mrs. S. S. Crockett, chairman of the Department of Public Health, and Miss Helen Louise Johnson, chairman of the Department of Home Economics of the General Federation, as well as with the members of the general board. Miss Johnson on the unanimous request of the committee agreed to cooperate with us. Since that time, three meetings of the committee have been held and a considerable amount of correspondence has been carried on, which has resulted in the preparation of a provisional program for public health study in women's clubs consisting of programs for eighteen meetings. An advance edition of this program has been printed and 3,000 copies distributed at the New York biennial of the General Federation.

MIDWINTER CONFERENCE

By special arrangement, the Midwinter Conference this year was held not only in connection with the Council on Medical Education, but also with the Federation of State Medical Boards and the American Association of Medical Colleges. By agreement between the four secretaries interested, the time was divided up so that the joint meetings could be held with separate business meetings of the four organizations. The second day of the conference was devoted to public health and legislation, the morning being occupied by a discussion of the state regulation of the practice of medicine. The program this year was especially significant. Gov. George H. Hodges of Kansas presented the opening address on the subject, giving his experience as an executive, and Prof. Irby R. Hudson of Nashville, Tenn., secretary of the new Board of Preliminary Examiners of that state, presented a year's experience with this new law. These addresses were discussed by Dr. Horace D. Arnold, representing the Council on Medical Education; Dr. Walter L. Bierring, representing the Federation of State Medical Boards of the United States; Dr. W. J. Means, representing the American Association of Medical Colleges; Dr. Royal S. Copeland, representing the homeopathic school, and Dr. John K. Scudder, representing the eclectic school. The afternoon was devoted to a discussion of state public health organizations, Dr. Charles V. Chapin of Providence, R. I., discussing this subject, and Dr. J. W. Kerr, Assistant Surgeon-General of the United States Public Health Service, discussing some essentials to the development of efficient health organization. The program was on the whole one of the most profitable which has been presented on these subjects.

SPECIAL ACTIVITIES

PUBLIC HEALTH SUNDAY

Following the custom of the past five years, the secretary of the Council, with the cooperation of the local committee, arranged to furnish a speaker on some appropriate public health topic for every church in Detroit desiring such an address, Sunday, June 11. The indications at the time this report is drafted are that this occasion will be quite as successful as in previous years.

PUBLIC HEALTH MEETING

One of the most serious defects in our annual program in past years has been that there was no marked event which

brought the annual session of the Association to a close. The success of the Commemoration Day meeting at San Francisco last year, and the growing interest in the public health addresses in the different churches, suggested the idea of holding a general meeting open to the public for the presentation of appropriate public health topics on Friday afternoon, as the closing event of the session. This plan having been approved by the Council and the Board of Trustees, arrangements were made for securing the Lyceum Theater, and through cooperation with the Michigan State Board of Health and with the Detroit Department of Health, plans have been made to observe Friday, June 16, as a special public health day. A public health parade under the auspices of the state board of health will be held just before the meeting. An appropriate program has been arranged, and through placards, newspaper notices, special announcements, etc., an invitation has been issued to the people of Detroit to attend this meeting as the guests of the Association. It is hoped that the success of the first meeting will justify the Council in making this meeting a permanent feature of the annual sessions of the Association.

OFFICE WORK

During the past year, the secretary has received 6,000 letters and has written 7,638. Requests for information from the sources indicated in Table 3 have been received and answered.

TABLE 3.—REQUESTS FOR INFORMATION

Source	Number
Attorneys	2
Boards of education	10
Boards of health	94
Clubs	33
Federal departments	10
Hospitals	11
Libraries	108
Life insurance companies	7
Medical Societies	14
Ministers	6
Nurses	37
Physicians	552
Publications	33
Universities, colleges, high schools, etc.	134
Y. M. C. Associations	18
Miscellaneous	673
Total	1,742

SUBCOMMITTEES

The reports of the various subcommittees are appended herewith. The members of these committees have labored faithfully and enthusiastically to advance the special lines of work assigned to them, and the results of their labors are herewith submitted for the careful consideration of the House of Delegates and its reference committees.

Respectfully submitted.

HENRY M. BRACKEN, Chairman,
WALTER C. CANNON,
WATSON S. RANKIN,
MILTON BOARD,
FREDERICK R. GREEN, Secretary.

REPORTS OF SUBCOMMITTEES OF THE COUNCIL ON HEALTH AND PUBLIC INSTRUCTION

REPORT OF COMMITTEE ON SOCIAL INSURANCE

To the Council on Health and Public Instruction:

In January, 1916, the chairman of the Council on Health and Public Instruction, Dr. H. B. Favill, wrote to the chairman of the Judicial Council asking that the chairmen of the two councils join together in forming a committee to study social insurance in its relation to the medical profession. The importance of this work had recently grown more and more evident and it seemed that in all probablity this subject would be, in the next few years, one of the most important that would occupy the attention of the profession both from an economic and a purely medical and surgical point of view. Dr. Favill appointed as a third member of this committee Dr. Frederic J. Cotton of Boston, who had been chairman of the Committee on Compensation of the Massachusetts State Medical Society for a number of years. Dr. Lambert, chairman of the Judicial Council, was appointed chairman of this committee. The committee was appointed under the power invested in the Council on Health and Public Instruction to appoint committees to carry on the respective purposes of the Council, and it seemed evident that any subject such as social insurance, affecting so intimately the health of the community and the interests of the profession, was one which clearly came under the duties of the Council to study and to assist in its development, and especially to safeguard the interests of the profession in this development.

At a meeting on Feb. 9, 1916, the Board of Trustees confirmed the appointment of this committee by the adoption of the following resolution:

"That the committee appointed jointly by the Council on Health and Public Instruction and the Judicial Council, consisting of Drs. Alexander Lambert, Frederic J. Cotton and H. B. Favill, be approved, and that the purpose and duties of this committee be understood to be the careful compilation of information in *re* social or health insurance and the relations of physicians thereto; and to do everything in their power to secure such constructions of the proposed laws as will work the most harmonious adjustment of the new sociologic relations between physicians and laymen which will necessarily result therefrom, and that this committee be authorized to carry on its work wherever seems most desirable."

The services of I. M. Rubinow, M.D., Ph.D., who was Chief Statistician of the Ocean Accident & Guarantee Corporation and President of the Actuarial Society, were secured as Executive Secretary, and a bureau has been opened at 131 East Twenty-Third Street, New York City.

The Committee on Social Insurance presents to the House of Delegates a statistical study of the medical profession of the United States in its various relations, both in the ratio of physicians to population, their geographic distribution, and the various other statistical facts that are of importance and interest to the profession. There are at present no reliable figures concerning the income of physicians and other economic facts of interest. The committee is endeavoring to obtain reliable information concerning this matter.

In the near future it is the intention of the committee to undertake the following duties:

First—to educate the American medical profession in the general principles of social insurance, particularly health insurance, the economic and social significance of the movement to obtain such insurance throughout the United States, and the absolutely essential part which the medical profession must play in a successful adaptation of this new legislation to American conditions;

Second—the bureau will consider it as part of its work to answer all questions which any physician may desire to write to it, asking for information, facts or figures bearing on social insurance in any of its phases, and to be in reality a bureau of information for the medical profession in regard to the details of organization, of medical aid in various forms of social insurance, both in European countries and the United States;

Third—the committee considers it its duty to appear when advisable before the legislative bodies in this country with a view to bring about friendly understanding between all parties concerned and to protect the legitimate economic interests of the profession in the laws coming up for discussion concerning social insurance.

The work of this committee should be directed in such channels as to avoid the conflict which has arisen in England at the beginning of a similar movement and which has resulted in a very large amount of bitterness between the profession and the public that might easily have been prevented by appropriate timely action.

It is further the intention of the committee to undertake the following lines of work without assuming the obligation of completing them within any specified time:

First—to collect a bibliography on social insurance with special reference to medical questions involved;

Second—to undertake, by correspondence, to get in touch with the various sickness insurance organizations in Europe so as to obtain first hand information as to their experience;

Third—to undertake a statistical study of hospital and dispensary facilities in this country in view of the possibility of

these institutions assuming a broader function under health insurance;

Fourth—to study the conditions of lodge practice both from the point of view of the physician and the patient;

Fifth—to gather all available information regarding the status, earnings, etc., of the medical profession in regard to which problem the wildest statements are current without any basis of fact underlying them.

The work of the Judicial Council on social insurance which has appeared in the reports of 1915 and 1916 will be transferred to the Committee on Social Insurance. As this work has been done by the chairman of the Judicial Council, the transfer of this activity from the Judicial Council to the Committee on Social Insurance will not in any way hinder this work.

A year ago the Judicial Council presented for the consideration of the House of Delegates a report on the various laws of social insurance which had been put in force in the old world, and, beginning with workmen's compensation laws, were gradually coming into force in this country. The more these laws are considered the more evident does it become that the medical profession not only is affected very materially by them but is in reality an absolutely essential part of the working mechanism by which these laws succeed or fail in their endeavor to bring about social improvement.

During the past year the number of states and territories having workmen's compensation laws has increased from twenty-three to thirty-three. In 1915 laws were enacted in Alaska, Colorado, Hawaii, Indiana, Maine, Montana, Oklahoma, Pennsylvania, Vermont and Wyoming. Only three of the new acts are compulsory for the industrial workers, that is, those of Hawaii, Oklahoma and Wyoming.[1] The law of Wyoming is interesting in its method of administration, being a straight insurance measure, all indemnities being paid out of a state fund made up by assessments imposed on employers, and an additional 25 per cent., not, however, to exceed $40,000, contributed by the state. In Pennsylvania, Colorado and Montana there are state funds created. Indiana, Oklahoma and Maine permit voluntary benefit schemes as a substitute for the statutory provisions. Alaska confines its compensation law to the mining industry, and Alaska and Wyoming do not provide medical aid; but the maximum compensation in Alaska is fixed at $6,000, which is the largest compensation payable under any of the existing compensation laws. Medical aid is provided for in all the other states and territories.

The waiting period in Colorado is lengthened to three weeks, and in the case of permanent total disability the compensation continues until death, only in Colorado and Montana. Colorado, also, is the only state which allows compensation until death in the case of partial disability. The cash benefits are 55 per cent. in Indiana, 60 per cent. in Hawaii, and 50 per cent. of the wages in all the other new laws.

In some of the states already having compensation there have been important amendments passed in the last year, particularly in California and New York. In California, an amendment allows that in defining injuries no reference should be made to accident, thus allowing compensation for loss due to disease contracted in consequence of employment. It is believed that about 2 per cent. of the cases affected would be thus benefited. The California law also gives full jurisdiction over all medical bills and attorney fees, and also definitely states that in the hearings by the commission the admission of hearsay evidence shall not be regarded as reversible error. In New York the amendment permitted a direct payment between employer and employee, where formerly it had to be done through the commission. These settlements remain subject to the approval of the commission, and if unjust to the employee the commission is given the power to add 10 per cent. to the award by way of penalty. The effect of this direct payment has been to clear up enormously the work of the commission, which had become clogged and in a seriously delayed condition. The New York law has been further amended in that if, in a second accident, a disability is acquired, it shall not be added to any previous disability acquired in an earlier accident.

1. Andrews, I. O.: American Year Book, 1915, p. 448.

There has been further shown, in the decisions of the courts in various states, an evident desire to broaden the protection of the wage earners. In New York it has been held that in the absence of federal legislation the state compensation law should cover the employees of interstate steamships and railroads. The Massachusetts Supreme Court sustained an award to the widow of a superintendent who was killed by a trespasser whom, under instructions, he had ordered away. In Wisconsin the courts ordered compensation paid when a worker died from typhoid contracted from drinking water supplied by the employer. In Minnesota the court gave compensation for death by lightning on the ground that the occupation exposed the workman to more than ordinary hazard. The compensation for occupational diseases was further emphasized by the New York Industrial Commission giving compensation for disability resulting from anthrax, declaring that occupational diseases fall under the head of accidents when the time of injury causing the disease can be definitely fixed.[2]

There has further developed an evident antagonism between the advocates of the insurance by the state and the private casualty companies. This, in Ohio, has developed into a legal controversy.

There has developed in the past year a further tendency toward other forms of social insurance besides the workmen's compensation. In Massachusetts, in the November election, six cities and towns voted to instruct their representatives to support old age pensions. This, apparently, is the beginning of a discussion on this subject. Bills have been introduced in eleven legislatures in 1916, the passage of which would bring compulsory health insurance into existence in these states. Compulsory health insurance brings such demands on the medical profession that these bills become immediately of the greatest interest to the profession. The Committee on Social Insurance believes it necessary, therefore, to discuss fully the relations of health insurance to the public and to show how necessary an administrative part of these laws the medical profession is and how necessary it is that the medical regulations arising from these laws should give both justice to the profession and to the sick to whom the services must be rendered.

Social Insurance in Europe

As was shown in the report of the Judicial Council, submitted in 1915, compulsory health insurance has been long known abroad. Germany and Austria-Hungary, England, Norway and Russia had before the present war definitely working health insurance laws, the study of which gives valuable information of things both to avoid and to follow.

Voluntary Insurance

Considering first the question of voluntary insurance, subsidized state insurance and compulsory insurance, it is evident, as was emphasized last year, that the voluntary insurance as seen in Germany and Great Britain previous to the adoption of compulsory insurance secures protection against sickness only to the thrifty and well paid industrial workers. It does not reach those who need it most. Even when subsidized by the state, a voluntary sickness insurance, as seen in France, Denmark, Sweden and Switzerland, has this same inherent fault. Those who are the least able to stand the individual calamity of illness are the least protected against its occurrence. Those of the working classes who, through thrift and good wages, are able to lay aside some funds against possible sickness and calamity, are the ones found grouping themselves together in the great friendly societies of Germany, England and the United States which, in Europe, have been the forerunners of the comprehensive national scheme. The very poor, living from hand to mouth by daily wage, with no savings to protect them and tide them over any cessation of daily income, whose small wage does not give them more than the bare necessities of life, denying them almost all pleasures and recreations, are the ones to whom sickness is a personal calamity against which they can make no preparation, and when it comes, have no protection and from whose meager wages nothing can be deducted for their protection. These are the ones that necessarily must suffer the most. Only compulsory state insurance reaches this group of people.

2. Andrews, John B.: American Year Book, 1915, p. 438.

In considering the figures of any country, while we may realize that the funds invested in voluntary insurance may be huge, as the accumulated funds in Great Britain previous to the national scheme of $200,000,000 protecting 6,000,000 families a year, or in France, ten years ago, where the assets amounted to $82,000,000 and the expenditures to some $10,000,000, protecting about three quarters of a million people, compared with the total mass of wage earners they are really small. In Denmark, after thirty years' experience, and in Sweden, we find actually, although subsidized by the government, voluntary sickness insurance does not protect more than 20 per cent. of the population of Denmark and only about 10 per cent. of the population of Sweden, even though in Denmark this insurance extends not only to the wage earner himself but also to those dependent on him.

COMPULSORY INSURANCE

Compulsory sickness insurance in Great Britain in the last four years has brought out the fact that previous to the universal insurance huge masses of the poor never had had any medical care. There had been a vicious circle of poverty, disease and unemployment which had constantly reacted one on the other, each factor intensifying the other two and producing as a result a huge mass of the poorest members of the working class unprotected against sickness, uncared for when sick, living an existence in civilized communities little better than savages. Few stop to realize the economic necessity of health to the wage earner. With the poor all that separates their poverty from absolute destitution and want is the ability to go to work each day. If sickness deprives the poor man of this daily ability to work, he faces destitution, which means that unless he soon recovers his health he must turn to public charity to help him in the care of his family.

To appreciate fully the difference between the voluntary subsidized insurance of the countries mentioned and compulsory insurance, and the details of the way they are managed, it is necessary to consider each country somewhat in detail.

Denmark.—In Denmark official recognition and state subsidy is granted to such registered mutual insurance societies as comply with certain simple conditions. As is described in Frankel and Dawson's "Workingmen's Insurance in Europe," we see that the societies contain at least fifty members and that the societies may organize either by localities or by industries, the maximum age limit of entrance being 40. No person may be a member of more than one society. There is no medical examination, and even the chronically ill may be admitted; these, however, are not entitled to benefits for their chronic illnesses. Members and their children under 15 years of age are entitled to medical treatment. To those living in the country, free transportation to physician or midwife is given. In addition to medical care, sick cash benefits are paid, ranging from 11 cents per day for those in the country to a maximum of 54 cents for men in the cities such as Copenhagen. The sum paid, however, is limited to the member's average daily wage. The rate of sickness seems to vary from 2 days per man per year in Jutland, that is, rural districts, to over six days in Copenhagen, that is, urban districts, averaging an annual paying of $2.70 per member through the kingdom. To meet this there was an income of $2.97 per member with a subsidy from the government of 54 cents per member and an amount equal to one fifth of his contribution. In 1907 there were 1,500 such societies, the membership being entirely voluntary and no obligation being imposed on workmen or their employers to contribute. In 1907 these 1,500 societies had 514,000 members aggregating about 30 per cent. of the adult population, and a large number of children were also entitled to benefit.

Practically all these societies are insolvent, from an actuarial point of view, with insufficient funds accumulated to meet their claims permanently. Many societies for this reason have at times been forced to suspend, and many of these suspended societies have joined to form a central reinsurance society by which they hope to maintain an average condition. Associated with the sickness insurance societies are a large number of funeral and burial organizations. In most cases they are merely adjuncts to the former; in other cases they have an independent existence. Entrance to them is limited to men under 40.

Belgium.—Just previous to the war Belgium had found that even after an endeavor to encourage and establish friendly societies, and sickness insurance through them, the plan was a failure. Among the registered societies which were recognized, their operations were defined in part as follows: "The payment of sickness and burial benefits, the temporary assistance of families of disabled members, and the aiding of members and their dependents to make use of the governmental savings and annuity bank; cattle and crop insurance; encouragement of savings; granting loans to members; not to exceed $60 to each." The so-called recognition carried with it the right to sue and be sued and exemption from taxation as well as a state subvention. Such societies could also form federations, and while the state supervised their investments, it left their management autonomous. In 1907, it is stated, there were 3,330 associations with a membership of 400,000, the total population of Belgium at this time being 7,300,000 and the wage earners 1,200,000, thus leaving two thirds of the wage earners unprovided for. Of the unregistered societies there were approximately 800 with only a membership of 50,000.

France.—The development of sickness insurance in France has been through various mutual sickness societies, and at present there are two classes, known as approved or free, corresponding to the registered and unregistered societies of England. These societies have corporate existence but with strictly limited powers. They may undertake any form of insurance authorized by law. The management of their funds is supervised and regulated; they may form federations for mutual purposes, distributing among constituent societies the burden of each, thus securing a basis large enough to furnish reliable averages permitting free movement of members from one district to another without loss of privileges. In France, honorary members of societies play an important part. These are usually men of means who give largely of time and money, and in any community nearly every benevolently inclined person is an honorary member of one or more societies. Owing to the cooperation of these honorary members and of the schoolteachers, there have been formed societies of children in the schools—boys and girls between the ages of 6 and 16—who are taught to save money for old age and to provide against disability by means of insurance. At 16 they are enrolled in adult societies. This early membership is of the greatest importance from the actuarial point of view as enabling old age annuities to be more easily obtained because the premiums against sickness and disability almost entirely absorb contributions that the wage earners of older years are able to make. The membership of the children seems to amount to over 25 per cent. of the total. Employers contribute only when the societies are founded in connection with a particular establishment. The societies are practically controlled by their members, who contribute about 1 franc (20 cents) per month. If the wife and children are insured with the husband, an additional contribution is required. Trade associations may obtain a legal standing similar to the free sickness societies; they are permitted to acquire property and to provide any benefit, industrial, commercial or agricultural, which they see fit. They may also form federations and organize special benefit and insurance funds. Some of these associations have been established by employers; some are composed solely of employees; some are of mixed membership, and there are agricultural associations. In 1905 there were nearly 11,000 of these associations with over 1,700,000 members. The activities of these societies include 1,366 employment bureaus, 929 sickness benefit funds, 718 unemployment funds, 695 funds to support workmen traveling in search of employment, 76 old age pensions, 26 funds insuring against industrial accidents.

The seamen and the miners are the best protected against sickness of all these trade groups, because for them obligatory sickness insurance schemes have been established by law to which both employers and employees contribute. Disabled seamen are compensated by the ship owners for a period up to four months, at the end of which time obligatory accident and invalidity insurance applies. Among the miners,

mutual sickness societies exist to which both employers and employees must contribute; medical attendance is furnished and medicines and sick benefits to disabled members, and in case of death, relief to their families.* Cash benefits or annuities to widows and orphans or dependent parents may also be paid. Assistance for wives and children of members called into the territorial or reserve military services may also be provided, and special pensions for widows and orphans of such deceased members.

These obligatory societies are maintained by deductions from wages which must not exceed 2 per cent. of the wages nor $9.60 per year; by payments by the employers of a sum equal to one-half the aggregate amount paid by members; by subsidies from the government; by sums donated or bequeathed by charitable persons, and by fines incurred for infringement of rules or regulations. The government looks on these societies with great favor. In 1907 about 6,000,000 wage earners were thus protected, leaving probably an equal number of the industrial workers of France still uninsured against sickness.

Switzerland.—Switzerland, having passed its law of subsidized sickness insurance in 1912, has the latest and best law of this type. According to Rubinow, the Swiss law not only aims to stimulate the formation of sick benefit societies but also to improve the nature of their service. This law provides a schedule of subsidies adjusted to the extent of the society's activities, 67.5 cents for children under 14 and the same amount for each male adult, 77.2 cents for each female adult if only one of the two mentioned functions—sickness benefits or medical aid—is provided, and 96.5 cents if both features are furnished, and $1.06 if sick benefits are furnished for 310 consecutive days. This subsidy may be increased in mountainous districts to $1.35. An additional subsidy of from $3.86 to $7.72 is given in cases of confinement. The Swiss law further stipulates that sick benefits shall not be less than 19.3 cents per day. It requires, also, that not less than three months must expire after entrance into the society before the new member may draw benefits; but a waiting time after falling sick must not be longer than three days, and the confinement benefits must be granted for at least six weeks. The law also requires that the society shall be financially sound, and it prescribes a definite system of organization of medical and pharmaceutical help which prevents excessive cost of services and gives to the sick member a certain selection of physician. This last factor of cost and choice of physician, we shall see later, has been the stumbling block in all countries.

It has been a noticeable feature in the subsidized state insurance schemes that the rapidity and energy of their growth seems to have been in ratio to the subsidies obtained from the state. Without state aid only the more thrifty and well-paid of the workers seem voluntarily to insure, and many of these often are unable to keep up their insurance, and drop it. As long as the state held aloof and simply regulated the control without giving assistance, the growth of this voluntary insurance has always been slow. The more the state has given assistance, the greater has been the number of workmen who have been able to obtain the protection they seek. After twenty-five years' experience in various voluntary forms of sickness insurance, subsidized or not, several nations in Europe have realized that the logical conclusion was compulsory state insurance in which workmen and employers alike contributed and the state assisted with amounts sufficient to insure the payment of the management of the huge machine. The ratio of those insured to the total population is interesting, comparing it in the countries of voluntary insurance and compulsory insurance.

Denmark has a total population of 2,757,000; insured 710,000, which is 25.8 per cent. of the population. In France the 6,000,000 insured equals about 10 or 12 per cent. of the population; in Great Britain the 14,000,000 insured of the 45,000,000 population is 31 per cent. of the population. In Germany, in 1912, there was a total population of 64,000,000 and there were 19,000,000 insured, giving about 31 per cent. insured. It is very noticeable that five countries of Europe between 1909 and 1912 passed acts of compulsory insurance: Norway in 1909, Serbia in 1910, Great Britain in 1911, Russia in 1912, and Roumania in 1912.

In discussing workmen's compensation last year, it was shown that 6 per cent. of the industrial workers suffered from accident during the year, and it was also stated that from 40 to 50 per cent. suffered from some form of sickness. It was shown last year how clearly certain occupations increased the liability to accident, and attention was drawn to a table published showing the influence of sex and occupation on certain diseases. Every important occupation has its own definite sickness rate. This is outside of the so-called well recognized occupational diseases These two tables are published in page 39 of the Judicial Council Report for 1915.

In the Report on Sickness Insurance of the Committee for Immigrants of America, discussing these same tables, it is shown that the data coming from the Leipzig sick fund eliminate the variations produced by race, sex and age. The industrial factor is isolated and is evidently a strong one. The variation between industries is less marked than in the case of accidents. All excess of sickness found above the minimum rate of those of office employees can be charged in a great measure to industrial conditions. For example, if the chance of taking sick is only 21 per cent. for office employees, for men, and 21.4 per cent. for women, and in hotels and restaurants the rate is 32.5 per cent. for men and 40.9 per cent. for women, and the annual loss of days through sickness per person is, for the office employees, 5.8 for men and 7 for women, and for hotels and restaurants it is 8 days for men and 12.2 for women, then the extra 2.2 days' loss per person per year for men and 5.2 per person per year for women can be justly laid to the difference in the environment of those working in hotels and restaurants and those working as office employees. The loss, therefore, should be distributed as in accident insurance, so that the industry may bear its just share and the state not only accept equal responsibility for sickness as for accidents to assist those who need it. It would also seem that there was equal justification for such aid as that in which the states and municipalities now accept the responsibility of spending large sums in preventive hygiene, as seen in health department work, and also large sums in public hospitals and dispensaries.

COMPARISON OF METHODS ABROAD

To understand compulsory insurance and its workings, a comparison of the methods of Norway, Russia, Austria-Hungary, Germany and Great Britain will give the clearest idea.

Russia.—The mining industry was the first one of the great industries to develop in Russia, and as long ago as 1806 there was a law requiring proprietors of mining and metallurgical industries to establish hospital facilities for sick or injured employees, and many of these establishments were owned by the state or crown. This idea was developed further in 1866 when an epidemic of Asiatic cholera broke out in Moscow. The governor of Moscow, considering the large factories where the insanitary conditions and large number of workers were the means of spreading the cholera epidemic, in a letter to the minister of the interior requested that they be required to establish hospitals and employ physicians in connection with their industrial hospitals. The law of 1866, therefore, provided that there should be established in connection with each factory employing 1,000 workers a hospital with ten beds, and at each factory employing more than 1,000 workers fifteen beds or more, and at each factory employing less than 1,000 workers five beds or more at the rate of one for each hundred workers. Although this law was declared to be a temporary measure, it is still in force. The establishment funds connected with all large industries in Russia are based on the existence of this original order of the emperor.

Outside of the city of Moscow the following regulations established by the provincial factory commission is given as a type.[3] Factories employing 500 or more workmen are required to have a factory hospital with one bed for each hundred workmen, a resident physician and a "feldsher," who is a medical assistant of higher grade than a trained nurse. When the number of workmen exceeds 3,000, two physicians must be employed, one of whom must reside at the factory. Factories employing from seventeen to 500 workmen may make arrangements with the zemstvo hospi-

3. Twenty-Fourth Annual Report, Commissioner of Labor, vol. ii.

V. 19

tals, or several factories may combine for establishing a common hospital. When the factory hospital has less than five beds, the physician need not reside at the factory but must not live more than 7 versts (4.7 miles) from it and must visit it at least three times a week, but the hospital must have a resident feldsher. If the factory has no hospital of its own and is more than 2 miles from the hospital to which it can send its workmen, this factory must have an emergency room with all necessary appliances for first aid, and if the number of workmen exceeds 200, it must also have a feldsher. The hospital which cares for more than 500 workmen must have a general ward and contagious ward with facilities for isolation, and a dispensary for outside patients; where both men and women are employed, there must be wards for each six. In factories employing from 200 to 500 workmen, the hospital must contain at least two wards, an examination room, and a waiting room for outside patients. In factories employing less than 200 workmen two wards are required, one for the beds and one for the outdoor patients. Where 200 or more women are employed, a special maternity room must be provided and also the services of a resident trained midwife; where less than 200 women are employed, such room and the services of a midwife must be furnished by the employer when necessary.

While these regulations here are given as a type, apparently only the commissions of Petrograd, Moscow and the Warsaw provinces require maternity wards in factories, and the regulations by different commissions vary considerably in detail. The factory owners are forbidden by the law of 1866 from charging their employees for this hospital service. There is a tax in sixteen of the large industrial centers of Russia, which is a hospital tax on the wage earners, and in return for this tax the wage earners obtain the right of free medical treatment in hospitals not only for themselves, but also for their minor children. In Petrograd there are sufficient municipal hospitals so that the factories are relieved of their responsibility in this matter. Moreover, the employees are not taxed as in other cities, and because they have no right of free medical treatment in the municipal hospitals, the factory owners are required to meet the cost of treatment of their employees in the hospitals and the factory physician must visit the factory at stated intervals, for the factories are required to provide for treatment of outside patients by a physician as well as an emergency ward for first aid. Besides the daily visits to the factories employing over 1,000 persons, the factory physician must treat the patients at his house or at their houses.

In the rural parts of Russia there has developed a system of state medicine under the zemstvos, which are equivalent to our board of overseers of each county, and are elective in character. These zemstvos have established hospitals presided over by physicians who are men or women, with whom there are nurses and feldshers, and midwives. These give the entire medical care free to the peasant population of the district. The well-to-do nobles employ other physicians or the same physicians on a fee system. Thus it seems that 90 per cent. or more of the people of Russia are cared for under a system of free state medicine. Often there is a combination between the special factory hospitals and the establishment funds and the zemstvos supplying hospital and medical facilities to the employees of the establishment funds. The Russian system of compulsory health insurance, therefore, seems to be a combination of establishment funds, especially in the urban districts, and a rural system of free state medical service. This, in practice, seems to give excellent results.

Norway.—In Norway, when the workmen's insurance against accident was considered, compulsory sickness insurance was also recommended. This, however, was not adopted until some years later. The organization of that is a series of district or communal organizations with a central state body. This state organization has an equalization fund taken from part of the contributions for the state which protects the different communal societies against excessive sickness and mortality losses. The societies pay benefits for the first six months of illness, with not more than thirteen weeks in the second half year, if sickness continues that long. Industrial and agricultural workers are included, as well as unskilled laborers and inland sailors under certain conditions, but the insured must have been employed at least six days, which excludes a certain number of day laborers. But if these are not insured under the sickness insurance, they are provided for under the accident insurance law. Seamen engaged in foreign trade are excluded, but sailors engaged in coastwise trade are included, even though they visit foreign shores for a period of ten days. The workmen pay six tenths of the cost under this law, the employer one tenth, the state two tenths, and the commune one tenth. For voluntary insured persons, not included under the compulsory section, the workman pays seven tenths, the state two tenths, and the commune one tenth. All disputes between societies, workmen and employers are settled by a jury of those chosen by the communal authorities for three years, one a member of the committee, one an employer, and one a workman. These decisions may be final or appealed to the Royal Institution of Insurance. In case of questions of law, the appeal goes to the courts. If a commune is a party in the case, the appeal goes to the Commission of Royal Insurance. About 1,000,000 persons are insured under this law. Besides this state law, there are some mutual insurance societies in Norway not under the state commission.

Germany.—Just prior to the passage of the sickness insurance law in Prussia, statistics show that 839,602 members belonged to registered friendly societies, 220,000 to miner societies, and about 200,000 to nonregistered friendly societies. Only about half of those for whom the insurance law was intended had availed themselves of its protection.

In the sickness insurance law first passed in 1883 no attempt was made to centralize control. It apparently was realized that it was wisest to utilize existing agencies as far as possible. The aim sought was mutual insurance with self-administration, and the development was through the already existing societies, and the various associations composed of members of the same trade or locality best lent themselves to this purpose. Eight distinct classes of society, each absolutely independent of the other, were recognized, the only common requirement being that they should make annual reports and conform to provisions of the law with reference to minimum benefits and methods of investing funds.[4]

1. Communal societies (*Gemeindekrankenkassen*). These were not really societies but local institutions, founded by the authorities and required to accept all, of whatever occupation, who were obliged to insure but did not belong to any other sickness insurance society.

2. Local societies (*Ortskrankenkassen*), established by townships, for the various trades, two or more townships often uniting to form one society. At present the most popular of all because of their elastic management.

3. Factory societies (*Betriebskrankenkassen*), created by proprietors of factories in which more than fifty workers are employed, particularly in trades in which the risk of sickness or accident is high. Management is under the joint control of the workingmen and the employers.

4. Builders' societies (*Baukrankenkassen*), which are practically establishment funds founded by contractors in building operations and in public works because of the great risks of these trades.

5. Guilds, sick-clubs, or trade societies (*Innungskrankenkassen*), authorized by the national trades regulation law. These do not possess legal personality, but are considered a mere function of the guilds or trade unions.

6. Miners' societies (*Knappschaftskassen*), formed in accordance with the mining laws of the several kingdoms.

7. Voluntary mutual aid societies (*Hilfskassen*). These are the friendly societies supported and controlled solely by members without any participation by employers. Membership is usually without regard to trade. They are not under the control of authorities except that they must grant the minimum benefits required by law.

8. Independent state societies (*Landesrechtlichehilfskassen*). These are voluntary associations, organized under the auspices of certain kingdoms of the empire.

The act of 1911 included the two large groups of domestics and farm hands which led to the establishment of a new type of so-called rural fund, which is also a local fund for workers

4. Frankel and Dawson: Workingmen's Insurance in Europe.

of a lower wage scale. Out of some 20,000,000 insured, about 7,500,000 are insured in local funds, another 7,500,000 in rural funds, and 3,000,000 in establishment funds, leaving only 2,000,000 for all other forms of funds. Membership in mutual aid funds, which are equivalent to the friendly societies or fraternal orders, as a substitute for insurance in the compulsory institutions is only tolerated and at the price of forfeiting the employer's contribution.

Contributions to voluntary societies are not fixed, but those to the communal societies are limited by law to from 1 to 2 per cent. of the daily wages of daily laborers. In others, contributions must not exceed from 3 to 4 per cent. of the same. In this the workingmen pay two thirds and employers one third. In practice, employers pay all and deduct the proper amount from wages. This method avoids all necessity for collectors, contributions both of employers and employees being turned over to the societies at convenient intervals.

The employer must enforce on his men the duty of insuring. The workingman may or may not insure, as he pleases. But whoever employs an uninsured workingman renders himself liable both to a fine and to the payment of all costs in case of sickness or accident. In such cases the communal society of the district assumes the entire care of the employee, gives medical care, and gives the usual cash benefit during disablement, for all of which the employer becomes liable to the society.

Frankel and Dawson further draw attention to the strong tendency toward the disappearance of smaller societies by consolidation into larger central organizations, and in Leipzig and Dresden, where the sickness societies have merged into one local organization, the work is most effectively carried out. The administration of a single large society has proved much more economical than in the numerous smaller societies displaced. In 1907 there were 23,271 total societies with 8,972,210 men and 3,166,757 women members. Table 1 shows the percentage and duration of sickness and the percentage of deaths in sickness insurance societies from 1888 to 1907.

In Division 1 of this table there is a steady progressive increase in the amount of sickness in the period under observation, women enjoying more freedom from sickness than men not only in the total but also in each type of society. This is probably due to the greater risk of accident in the trades in which men are employed, because for the first thirteen weeks the sickness society cares for both accident and sickness. It is also due to the higher average age of the men. The number of cases of sickness among the two sexes, as shown by Frankel and Dawson, differs considerably with the type of society.

It is evident that the average duration of sickness, in the division of Table 2, so-called, has also increased, showing longer periods. This is so marked that in spite of the fewer cases of sickness, the duration of sickness per member each year is greater than among the men. This is probably due to the fact that the cases of brief duration are almost twice as numerous for males as for females; the cases of sickness of longer duration (lasting over three weeks) show the contrary.

Austria-Hungary.—Austria-Hungary follows closely the plan of Germany. Previous to the passage of the compulsory law, Austria also had had large establishment funds and voluntary organizations, in some of which the employers were contributing, in some only the workmen, and in some instances both. The number of workmen thus insured was relatively small, for there were only about 300,000 members in 748 societies, and the benefits given were inadequate to meet the situation. All workmen and working women are included, as well as the employees in all branches of industry, trade and transportation; those engaged in navigation, forestry, agriculture and home industries, as well as those employed by the states and communes, may insure voluntarily. Trade guild societies, private friendly societies and miner's societies which were willing to grant the minimum benefits of the new law, were continued. District, building, trade and factory societies were distinctly the creations of the compulsory law. The following six types of societies are recognized:

1. District sickness insurance societies (*Bezirkskrankenkassen*) which, like the local and communal sickness societies of Germany, correspond to geographic districts.

2. Factory sickness insurance societies (*Fabrikskrankenkassen*) organized by owners of large factories, not connected with trade guilds.

3. Building trades sickness insurance societies (*Baukrankenkassen*), usually temporarily established by builders.

4. Trade-guild sickness insurance societies (*Genossenschaftskrankenkassen*), corresponding to Class 5 of the German system.

5. Private friendly societies (*Vereine*).

TABLE 1.—PERCENTAGE AND DURATION OF SICKNESS AND PERCENTAGE OF DEATHS IN SICKNESS INSURANCE SOCIETIES, 1888-1907 *

		1888	1892	1903	1904	1905	1906	1907
1. Cases of sickness per year per 100 insured	Men	33.5	36.8	38.3	40.9	41.4	39.4	42.7
	Women	28.8	31.3	33.0	35.4	35.0	33.4	35.6
	Both sexes	32.6	35.6	37.0	39.5	39.8	37.8	40.8
2. Average number of days of sickness per case	Men	16.6	17.0	18.1	18.7	18.7	18.5	18.5
	Women	17.7	18.3	21.9	23.2	23.5	24.1	23.4
	Both sexes	16.8	17.3	19.0	19.7	19.8	19.8	19.6
3. Days of sickness per annum per 100 insured	Men	555.6	626.6	695.3	762.1	775.9	728.6	788.7
	Women	508.3	569.7	720.4	822.9	921.9	804.7	833.1
	Both sexes	547.0	614.7	701.5	777.4	787.5	748.1	800.3
4. Deaths per 100 insured	Men	1.00	1.03	.86	.84	.86	.81	.84
	Women	.77	.74	.61	.65	.64	.60	.61
	Both sexes	.96	.98	.80	.80	.81	.76	.78

* Frankel and Dawson: Workingmen's Insurance in Europe, Table 70.

6. Miners' societies (*Bruderladen*).

To these original six classes there have since been added mutual sickness insurance societies comprised chiefly of employees, and there is also an eighth class—societies composed of apprentices. The latter are offshoots of the trade-guild sickness insurance societies and are associated with them.

In all organizations, except in the private friendly and miners' societies, contributions of employers and workingmen amount to two thirds and one third, respectively. In private friendly societies, the employers need not contribute at all, and in the miners' societies only as required by separate statute. In practice, the employers' friendly societies do more than the law requires, paying more than the legal proportion in the various organizations. As in Germany, it is obligatory on the employer to enforce payments of workingmen. If a newly engaged employee does not already belong to some society, the employer must report his name to the authorities not later than three days after work is begun. For each neglect to do this, he may be compelled to pay a fine of about $5 and suffer imprisonment for two days.

The system of sickness insurance is less developed in Austria than in Germany. In Austria the first four weeks of accident insurance are taken care of by the sickness societies, and in Hungary the first ten weeks.

Great Britain.—In Great Britain, previous to 1911, insurance was carried on by so-called friendly societies, the membership of which was made up of the able-bodied active workingmen of England.

The most complete and most recent scheme of social insurance is the national insurance act of Great Britain, of 1911.

V. 19

In the *Bulletin* of the United States Bureau of Labor, which gives this law in full, it is shown that the title of the act is to provide for the insurance against loss of health and for the prevention and cure of sickness and for insurance against unemployment, and for purposes incidental thereto. Under its provisions health insurance is compulsory on all employed persons aged from 16 to 70, except those in the naval or military services of the crown, those in other employment under the crown or under local or other public authorities for whom adequate provision already exists, employees of railway companies and the like provided for by suitable benefits, teachers provided for under other acts, etc. Those affected by the exceptions are comparatively few, and may, in the discretion of the insurance commissioners, be transferred to the compulsory insurance scheme. Persons who are not subject to the compulsory insurance may voluntarily insure if they are engaged in some regular occupation and are wholly or

TABLE 2.—AVERAGE NUMBER OF CASES OF SICKNESS FOR BOTH SEXES PER HUNDRED INSURED IN SICKNESS INSURANCE SOCIETIES, 1888-1907 *

Sex	Communal	Local	Factory	Building	Guild	Mutual Aid	Independent State	Total
Men ...	27.3	37.5	44.7	58.3	34.4	37.3	31.2	38.0
Women .	22.2	33.6	37.4	47.3	26.6	33.7	28.8	32.1

* Frankel and Dawson: Workingmen's Insurance in Europe, Table 71.

mainly dependent for their livelihood on their earnings in such occupation or have been insured persons for a period of five years or upward; no person may become a voluntary contributor whose annual income from all sources exceeds $778.64, that is, 160 pounds, unless he has been previously insured for a period of five years or upward. There is no discrimination in respect of sex or of citizenship, but all insured persons must be residents of the United Kingdom.

The standard rates of insurance are 14 cents for men and 12 cents for women. This amount is made up of contributions from employer, employee and public funds, the amount paid by each depending on the insured person's rate of wages. If this reaches or exceeds 60.8 cents per working day, the employer pays 6.1 cents, male employees pay 8.1, and female employees 6.1 cents per week, nothing being contributed from the public funds. If the rate of wages falls between 49 and 61 cents a day, the employer pays for male employees 8 and for female employees 6 cents a week, and the employee, regardless of sex, pays 6 cents. When the rate of wages is between 37 and 49 cents a day, the employer pays 10 cents per week for men and 8 cents for women, the employee pays 2 cents, and 2 cents is contributed from the public funds. When the rate of wages does not exceed 37 cents a day, the employer pays for men 12 and for women 10 cents a week, the employee pays nothing, and 2 cents a week is provided from the public funds. These provisions relate only to employees of the age of 21 or upward. Employers are authorized to make payments in behalf of their employees and to deduct the employees' contributions from any wages payable by them to such employees. Contributions by voluntary contributors are made at rates fixed in accordance with a table prepared by the insurance commissioners, and are payable weekly or at other prescribed intervals by the contributors themselves. No contributions shall be payable in behalf either of employed persons or of voluntary contributors after they have attained the age of 70 years.

A central administrative body known as the insurance commissioners was created as a body corporate, with the power to appoint officers, inspectors, referees, etc., subject to the approval of the treasury. An insurance committee was also constituted for every county and county borough, its membership consisting of not less than forty nor more than eighty persons, some of whom must be women. These committees are authorized to subdivide the counties or boroughs into areas over which district insurance committees shall have supervision, and are required to make reports as to the health of insured persons and the conditions affecting the same within their respective counties and county boroughs, and also to disseminate information on matters relative to health, cooperating, if thought best, with local educational and other institutions. Causes of excessive sickness may be inquired into at the instance of insurance commissioners or of an approved society or by an insurance committee, and where such excess is due to neglect or insanitary conditions the costs of any extra expense may be demanded from the persons chargeable with such neglect, and an inquiry may be made by a special appointee of the secretary of state or local government board to determine as to the facts in the case and the justice of such claim.

The administration of the sickness, disablement and maternity benefits is committed, in the case of insured persons who are members of an approved society, such as friendly societies, trade unions, provident societies, etc., to the societies of which they are members, which societies are also charged with the duty of receiving contributions of their members in this behalf. Medical and sanitary benefits are administered through the insurance committees described below. This separation of the bodies administering the medical benefits from those administering the sick cash benefits has been the cause of serious administrative trouble. Persons not members of an approved society may pay their contributions through the postoffice, the fund thus created being subject to the control of the insurance committees.

There is a second part of compulsory insurance providing for benefit in cases of unemployment in certain trades. The board of trade administers this portion of the act, and the list of trades may be extended by this board. At present there are seven in number: building, including the construction, alteration and demolition of buildings; construction of works; including railroads, docks, harbors, canals, etc.; shipbuilding; mechanical engineering, including the manufacture of ordnance and firearms; iron founding; the construction of vehicles; sawmilling, and machine woodwork. Employers and workmen pay equal shares of a weekly contribution of 10 cents for this form of insurance. While Parliament contributes annually a sum equal to one third of the total contributions received from employers and workmen during the year, in general the employer is expected to pay the contributions of both himself and his workman, deducting the workman's portion from wages payable to the latter.

Applicants for benefits under this branch of the act must show they have been employed in an insured trade in each of not less than twenty-six separate calendar weeks in the preceding five years, that they are capable of working but unable to obtain suitable employment, and have not exhausted their

TABLE 3.—PROPORTION OF CASES OF SICKNESS LASTING OVER THIRTEEN WEEKS, BY SEX *

Duration of Sickness	Per 100 Cases of Sickness: Males	Females
From fourteen to twenty-five weeks.....	3.5	5.7
Twenty-six weeks and over.....	2.3	2.8

* Twenty-Fourth Annual Report Commissioner of Labor, vol. i.

right to benefits under this part of the act. Workmen are not required to accept employment in place of striking workmen, or at a lower rate of pay than is customary in their line of employment in their district. Where, however, the employment is lost by reason of a stoppage of work due to a trade dispute in the establishment in which the workman was employed, he can receive no benefits so long as such stoppage of work continues, unless he has during such stoppage become actively employed elsewhere in an insured trade. Workmen losing employment through misconduct, or voluntarily leaving employment without just cause, may receive no benefits for a period of six weeks from the date of such loss of employment. The benefits payable in cases of unemployment begin after the first week of the period of unemployment, and are fixed at $1.70 per week unless some other rate is prescribed. Employment benefits are not payable for more than fifteen weeks within a period of twelve months unless some other benefit period is prescribed, nor shall workers in general receive any unemployment benefit in excess of one week's benefit for every five contributions paid by them under the act.

Provision is made for the determination of claims and the arbitration of disputes in both branches of the act. It was estimated that there were 14,000,000 insurable persons in the compulsory class and approximately an additional 2,000,000 who could become voluntary members. According to the Fabian Society report, only about 21,200 did actually in the first two years become voluntary members.

The approved societies mentioned here are the various friendly societies equivalent to our fraternal societies and trade unions, provident societies and lodges, which had been giving sick benefit and insurance in England for so many years, and also specially approved societies of the Prudential Insurance Company called into existence to care for persons already insured in this company. These societies differed from the German approved societies in that they were not necessarily confined to any locality or trade, but their membership was scattered through many trades all over the kingdom. Some contained women and men; some had lodges of women and men separately; most were probably confined to men alone. All these societies were actuarially independent.

These approved societies[5] operating in 1914 in England ranged in size from the great centralized societies and the great affiliated orders with many hundreds of thousands of members down to the small village or local clubs whose membership in some cases did not exceed 100. Every conceivable variety or type of administration seems to be allowed. Some societies are centralized both as to control and as to finance; some permit their lodges to control the funds, and some have a central body supervising and equalizing the funds that are managed by the local lodges. This last method has given the best results. The trade union societies are composed usually of workers engaged in one occupation or a number of allied occupations, and therefore the risk of the industry is relatively evenly distributed and constant. In some of the big friendly societies, all trades are mingled together in one lodge and the uneven hazard of the various trades causes serious actuarial difficulties in the administration. This lack of homogeneity in many of the societies and local lodges, the scattering of the membership of the societies all over the United Kingdom, has proved to be a real defect in the English law.

ADMINISTRATION AND EXTENT OF BENEFITS

Sickness insurance, as is pointed out by Rubinow, is primarily a matter for local administration. Political exigencies forced the British government to accept the friendly societies as approved societies, because it is doubtful if any bill could have passed against the opposition of five or six million members of these friendly societies, one result being the establishment of approved societies of private industrial life insurance companies the membership of which exceeds 4,000,000. It is doubtful if this use of the private industrial casualty companies was contemplated or expected in England. Germany, on the other hand, used the same established funds and societies, but insisted on their localization either by trade establishment or geographic distribution. The great advantage of localization is that the administration of benefits—both medical and cash benefits—is greatly simplified. The establishment fund is less desirable because of the predominating importance of one employer and the financial danger which may develop out of one localized epidemic.

Considering the benefits given in the various countries under the sickness funds, Austria insists that the benefits provided by a sick fund must not be less than the following: From the beginning of a sickness free medical treatment, as well as free medicines and therapeutic appliances, as eye glasses, crutches, etc. Medical treatment includes lying-in treatment. In case the sickness lasts more than three days and the sick person is unable to work, he shall receive a cash benefit equal in amount to 60 per cent. of the current wages for ordinary day labor in that district, this cash benefit to be paid for a period of twenty weeks. In cases of normal childbirth, sick benefit is to be paid for at least four weeks after delivery. In case of death, the heirs shall be paid a funeral benefit not less than twenty times the rate of wages for ordinary day labor, as above. The benefit is paid if the death occurs after the twenty weeks, provided the sick person has retained his membership in the sick fund by continuing payment of dues; and if the disability is caused by an accident covered by the accident insurance laws, the funeral benefits may be claimed both from the sick fund and from the accident insurance institution. This rate of wages is revised from time to time, and under both sexes is rated as for adults and for young persons, that is, 16 years of age or younger. Apprentices are rated as young persons.

Hospital treatment may be given at the expense of the sick fund with the consent of the sick person, if the latter is living with wife or husband or with other member of the family in the household, or otherwise receiving home care; without the consent of the sick person when the nature of the sickness requires special treatment; in other cases regardless of whether the sick person consents thereto. If a person placed in a hospital has dependents on him, the sick fund must provide the dependents with at least half the sick benefit. The sick funds are expressly prohibited from engaging in invalidity insurance or the insurance of widows and orphans.

No sick fund can use as a basis for computing a sick benefit an average rate of wages lower than the official rate or higher than 81 cents per day; the sick benefit cannot exceed 25 per cent. of the wage rate used as a basis for computation, and the benefits cannot be paid for more than a year, and the funeral benefit cannot exceed $20.30.

The workmen and physicians have advocated free choice of physicians on the part of sick persons, but the funds have insisted on retaining the system of a corps of fund physicians, to any one of whom the sick person may apply for treatment. The compensation of the physician who is under contract with the fund is in the form of a fixed salary or in the form of a salary varying with the membership of the fund, although occasionally in the form of a fee for services in each individual case. In rural districts where there is a scarcity of medical practitioners, there are other systems of payment in vogue. Any expense which may be caused through the treatment of a member by any other than a fund physician will be reimbursed by the district sick fund only if the treatment has taken place at its order or by direction of the board of directors in case of emergency.

In Germany the sickness insurance includes the first thirteen weeks of accident insurance. Such accident must have taken place in the course of the employment; it must have befallen an insured person, and the death must have a causal connection with the industrial accident. The term "sickness" is defined to be an abnormal condition of health to remove which necessitates medical attendance and medicine. The period of convalescence following a sickness is not properly sickness, but when there is a recurrence of sickness during the convalescence, the disabled person becomes entitled to relief. Thus the sickness insurance in the first thirteen weeks provides benefits for both the disability of sickness and accident. As a measure of administrative convenience, maternity benefits paid in case of normal childbirth are provided for by the sick funds; in other words, maternity insurance has been combined with sickness insurance. If childbirth is not normal, it is a basis of claim to the regular sick benefits. The cost of burial of insured persons is defrayed by the funds, but not by the communal benefits.

The minimum benefits provided by the sickness insurance system consists of medical attendance, medicines and therapeutic supplies, and from the date the sickness or disability begins, regardless of whether it causes inability to continue working. If the sickness or disability prevents the insured workman from continuing work, he must be granted a pecuniary benefit which must not be less than half the rate of wages paid in the locality for ordinary unskilled day labor, this benefit to be paid for disability of not less than twenty-six weeks and not more than fifty-two. A pecuniary benefit of the same amount is paid for six weeks after the date of confinement to a female insured person in case of childbirth; and funeral benefit of twenty times the rate of wages in computing the benefit, but not less than $11.90. A person included in both the sickness and accident insurance, who is disabled by industrial accident, receives sickness insurance for thirteen weeks and in addition receives, at the beginning of the fifth week,

5. Report of Departmental Committee on Sickness Benefit Claims Under National Insurance Act, 1914.

the accident benefit. If, at the end of thirteen weeks, the disabled person has not recovered, the accident insurance or other associations then provide the regular accident benefits. A person included in both sickness and invalidity insurance, who is disabled by sickness, receives the regular sick benefit for a period of twenty-six weeks. If he has not recovered at that time, the invalidity insurance institutes then provide the regular invalidity benefits. If there is good reason to believe that by special courses of treatment a person disabled either by industrial accident or disease, causing extended invalidity, can be restored to health, then the agencies conducting the invalidity insurance are authorized to relieve the sick fund of the care of the disabled person and provide the treatment at their expense, or they may authorize the sick fund to provide such treatment at their expense. A pecuniary benefit, but not the medical benefits, may be refused by the sick funds if the disabled person has purposely caused the sickness or accident, or if the disability results from rowdyism or similar misconduct, or results from intoxication.

The services of physicians are to be provided in accordance with the regulations established by each fund. The usual plan is for the fund to make contracts with a number of physicians who give their services in return for an annual sum fixed in advance or for a specified sum per patient also fixed in advance. That is, in Dresden the physicians are under stated salaries, or, as in Leipzig, there may be a capitation fund of a stated amount divided according to services rendered to each patient, each medical service rendered counting so many points; that is, a day visit one point, a night visit two points, etc. In no instance is a charge fixed on the number of visits or number of prescriptions. Many of the sick funds, as in Leipzig, make contracts with a large number of physicians, and the insured persons may choose among them. In Leipzig the fund employs the services of 80 per cent. of all physicians in the city, while other funds, in order to secure through competition low rates of fees from physicians, provide only the services of a limited number of physicians. The competition among physicians to secure the position of medical officer has reduced the cost to funds to a very low level, but on the other hand it has caused intense quarrels between physicians and the funds. Such disputes were discussed last year in the case of the Leipzig and Cologne societies. The determination on the part of the sickness funds to control the physicians and the resentment on the part of the physicians to such control is shown in the number of disputes that continually arise. Up to 1911 in some 1,020 disputes, 961 have been decided in favor of the physicians. There is no question that some control, either medical or lay, must be exerted over the carrying out of any insurance scheme. It is also unfortunately a fact that a small percentage of all professions is dishonest and such dishonesty must be controlled.

In Leipzig the control of the medical service is brought about through the following committees*: a representative medical committee of the society doctors, a conciliation committee and an arbitration committee. The representative medical committee of the society doctors consists of twelve members chosen every two years by the doctors in the service of the society, four deputy members being elected at the same time to take the place of members who cease to hold office. A quorum of the committee consists of the chairman or vice chairman and not less than six members. Clerical work is provided for by the society if required by the committee. The duties of the committee relate primarily to the constant supervision and control of the society doctors, also to calculating and dividing the remuneration of the doctors and to the maintenance of their rights and interests. The committee controls all the accounts of the doctors after they have been checked so far as the figures are concerned at the office of the society. The committee sees that the charges are right and reasonable; amounts in excess of what should be charged are deducted, and it supervises the prescriptions of the doctors for drugs and other medical and surgical requirements, medicinal baths, etc. After audit of the figures and statistics of the society, the committee judges whether or not the prescriptions are economical, whether they are within the limits fixed, and whether proper provision is made for reuse of bottles, etc. The committee objects to the use of secret remedies, and deducts from the remuneration of the doctor for the benefit of the society, the amount of charges which should not have been incurred.

The committee supervises the number of persons certified by each doctor as unable to work and the length of time of the inability, according to statistics prepared by the society. The committee determines whether there has been an improper excess of the normal average. In case of serious default, such as wrongly certifying patients as unable to work, the society deducts from the remuneration of the doctor, for the benefit of the society, the excess charges incurred. The committee communicates semiannually to all society doctors the results of the statistics prepared to which reference has been made above. If the committee finds that a doctor has been seriously at fault in the foregoing matters, it may take one of the following actions, in addition to making the deductions from the doctor's remuneration: give advice or written warning; after two unheeded warnings, temporary suspension for from one to twelve months from attendance on society patients. Before giving warning of suspension, the doctor concerned must be heard. If a doctor has been twice temporarily excluded from the society practice without result, and if the society does not give the doctor notice to terminate his contract, the committee may make a request to the Arbitration Committee that the doctor be permanently excluded from society practice. Complaints made by a patient or by the society with regard to the practice of a doctor are to be brought before the Representative Medical Committee for its opinion. The opinion on the case is to be communicated to the doctor by the committee. The rights of the society with regard to giving notice to terminate a contract are not affected by any action under this provision. The society has to prepare for the committee all the information necessary for the duties imposed on it by the foregoing rules. Circulars and directions which the society proposes to issue to its doctors are first to be submitted to this committee for its information. Complaints by the doctor against the society have first to be submitted to the committee which gives an opinion to the doctor on the complaint. Complaints by doctors of members of the society have to be communicated to the committee only if the managing committee of the society does not give satisfaction to the doctor in regard to the complaints.

The Conciliation Committee is appointed for deliberation on questions which appear to require consultation between the society and its doctors, and for the friendly consideration of all kinds of differences. This committee consists of two chairmen, two deputy chairmen and one member each, to be chosen for a year, of the managing committee of the sickness society and of the Representative Medical Committee. The deputy chairmen act as deputies for the chairmen. Persons specially appointed for the purpose, and for the same term of office, shall act as deputies for the deputy chairmen and for the other members. Either one of the two chairmen may call a meeting of the committee. Resolutions are valid only if all six members or their respective deputies are present and if at least four votes are cast for them.

The Arbitration Committee is composed of nine members. The chairman of the managing committee of the sickness society, the deputy chairman, and one other member of the managing committee chosen by the committee for a year, are the members of the Arbitration Committee. Three other members of the managing committee are chosen in case any of the other three are prevented from doing so. The chairman of the District Medical Association of Leipzig Town, the District Medical Association of Leipzig Rural District and the Representative Medical Committee are also members of the committee, and each of these are represented by his deputy chairman if the chairman is prevented from acting. To these six representatives of the society and of the doctors are added two members of the royal district government, and the medical councilor of that authority for the district. The material expenses of the Arbitration Committee are borne by the doctor whose appeal is being considered if his appeal is not upheld; if his appeal is upheld, by the two doctors' associations and by the society in equal shares.

* Gibbon: Medical Benefit in Germany and Denmark.

The Arbitration Committee meets on the invitation of the local royal insurance authorities on their premises. A member of this local insurance office is chairman. Five members are a quorum and resolutions are valid if passed by a majority. If the votes are equal, the chairman shall have a casting vote. The Arbitration Committee decides definitely on matters referred to it in accordance with the agreement of Dec. 31, 1910, or in accordance with individual agreements made with the doctors, or on such matters as may in future be referred to it; also on appeals against measures taken by the Representative Medical Committee; also, on any proposal for permanent exclusion of a doctor, or for any change of the present stipulations. The committee also decides definitely on the interpretation of the various provisions of the agreement or agreements with the individual doctors, or of these conditions. The ordinary courts of law decide disputes which may arise in regard to remuneration and claims of those doctors who are employed at fixed salaries. These agreements are to remain in force until the end of 1916 and then continue in force for another year, unless a written notice to terminate the agreement is given by the society or by the district medical association, and the notice must be submitted to the Arbitration Committee for an expression of its opinion. The Arbitration Committee may decide to make its decisions public, but not decisions which touch the failure of duty or other personal circumstances of a doctor, or which, if published, would touch the interests of a third person. All appeals to the Arbitration Committee, to prevent their being excluded, are to be made to the chairman of the committee within four weeks after the decision against which appeal is made has been communicated to the doctor.

LEIPZIG REGULATIONS

The following extracts from the regulations relating to the medical practitioners of the District Sickness Society of Leipzig are given as being useful for reference in compiling such regulations[6]:

The Representative Medical Committee has to take notice, not only of contraventions of the terms of the agreement itself, but also of the regulations relating to doctors.

Medical Treatment.—If it is not clear from the membership book that the insurance contributions have been made in respect of the person up to the date on which medical assistance is sought, or if the receipted membership book cannot be produced, the doctor shall give to the person requesting treatment such primary treatment as may be necessary, if there is any danger in delay, but any further treatment, especially the giving of a prescription or a sickness book, shall be expressly contingent on the production of receipts in the membership book.

The treating doctor shall enter in the sickness card of the membership book the date of every first consultation, and, if possible, the date of every last consultation (or visit). Medical attendants at polyclinics shall do likewise.

Change of Doctor.—Patients may change their doctor in the course of an illness only with the consent of the society. The society shall not exercise any influence in the choice of doctor, and, if a change of doctor is approved, shall at once inform the doctor changed, with a statement of the reasons for the approval, according to the provisions of these regulations. The sending of a patient by one doctor to another society doctor does not require the approval of the society, but the change must be noted in the membership book and, if the patient is unable to follow his employment, in the sickness book.

The following rules shall apply to the granting or refusal of approval of a change of doctor:

1. Approval shall be given to the change of doctor by a member or dependent:

(*a*) If the society doctor refuses to continue the treatment of a patient and does not send him to another doctor, or if the patient does not wish to go to a proposed doctor.

(*b*) If the patient cannot be required to retain the same doctor because of the change of address of the doctor or of the patient, or of a change in the consultation hours.

(*c*) If the doctor who has given the first attendance in the case of an illness resides so far away, or his consultation hours are so inconvenient that there would be undue difficulties to the patient in being attended by him.

(*d*) If the contemplated change is from a general practitioner to a specialist, or from a specialist to a general practitioner.

(*e*) If change of treatment is contemplated, more particularly when the doctor advises a course of treatment or an operation which the patient rejects.

(*f*) If the deputy of the treating doctor does not possess the confidence of the patient.

(*g*) If the treatment has continued for a long time without apparent result (to give case of mind to the patient).

2. In addition, change of doctor shall be approved in the case of members who continue at work and of dependents:

(*a*) In case of differences between the doctor and the patient (in order to prevent further difficulties).

(*b*) In all other cases in which the foregoing conditions seem to exist. (In doubtful cases, the approval shall only be given after inquiry has been made of the treating doctor, and, in suitable circumstances, also only after a certificate has been obtained from a confidential medical adviser.)

3. Approval to change of doctor shall be refused:

(*a*) If the patient is not satisfied with the prescriptions of the doctor, or if he desires particular drugs or other means of cure.

(*b*) If the patient has made improper proposals to the doctor.

(*c*) In the absence of any adequate reasons.

4. In addition, approval to change of doctor shall be refused in the case of members who cannot follow their employments:

(*a*) If there is suspicion of malingering.

(*b*) While examination by a confidential medical adviser is pending.

(*c*) In case of dispute with the doctor as regards inability to follow employment. (In these cases the patient shall be speedily examined by a confidential medical adviser. The result of the examination shall be immediately communicated to the treating doctor. If the result agrees with the diagnosis of the latter, the refusal to a change of doctor shall hold good. Otherwise approval is to be given to the change . . . .)

The following cases are not considered to constitute a change of doctor and do not require approval:

(*a*) If at the commencement of an illness, notwithstanding repeated requests, the doctor does not attend and the patient goes on to another doctor.

(*b*) If a patient, in consequence of a sudden change in his condition and inability to obtain readily the services of the treating doctor, obtains the services, for the time, of another doctor.

(*c*) If a doctor discharges a patient from his care as cured and the latter still considers himself ill. (If a patient in such a case is certified as unable to follow his employment by the new doctor, he shall forthwith after receipt of his sickness book be examined by a confidential medical adviser.

The Sending of Patients to Hospital.—The doctor shall send sick members to hospitals, etc., (even against the will of the member in the circumstances set out in Section 12, Part 3, of the rules of the society) in cases of:

1. Illnesses which require long surgical attention or serious operations.
2. Illnesses of all kinds when, because of the conditions of the dwelling place and the like, treatment in a hospital is desirable.
3. Infectious venereal diseases, especially if the patient is unable to follow his employment.
4. Enteric fever, cholera, smallpox, scarlet fever, diphtheria, epidemic cerebrospinal fever.
5. Suspicion of malingering.
6. Request of the managing committee of the society.

Members who, according to Section 12, Part 3, of the rules of the society, have the right to refuse hospital treatment may be treated in their homes, after the advantages of hospital treatment have been repeatedly brought to their notice. Since patients who have not the right to refuse hospital treatment lose their claim to money benefit in case of refusal, the doctor must forthwith report to the society any such case of refusal.

Members who are declared able to follow their employment but who assert that they are still unable to do so are as a rule to be sent to hospital for observation if they so desire.

Request for reception into a hospital has to be made as a rule to the administration of the society. As an exception members may be sent directly to a hospital when there is danger in delay as at times when the offices of the society are closed. The necessity for conveying the patient by ambulance or carriage is to be indicated on the certificate.

Dependents of members cannot compulsorily be sent to a hospital, but, in circumstances such as those mentioned above, the doctor shall also in these cases endeavor to persuade such patients to go to a hospital.

When patients are recommended to go to a private clinic, they shall be informed that treatment in a public institution is without charge to them, but that they have, as a rule, to pay (in part) for treatment in a private institution.

6. Gibbon: Medical Benefit in Germany and Denmark.

Certification of Inability to Follow Employment.—Care is to be exercised in determining the first day when the patient is able to resume work, and, in doing this, account is not to be taken of the first day of the week, but the first day shall be certified which succeeds the last day of inability to follow employment, even when the day is a Sunday or a holiday.

Sickness Book.—. . . If there is any suspicion of malingering, the patient shall as a rule not be allowed to go out, at least not beyond the visiting of the doctor during his consultation times; in suitable cases, the patient is to be ordered to remain in bed.

In recording diagnosis, general indications are to be avoided as much as possible—for example, recording simply lead poisoning, nervous disease, stomach trouble, throat trouble, kidney disease, abdominal complaint, venereal disease. Occupational accidents are to be indicated as such.

During the continuance of inability to work, the doctor shall give to the patient, after examination, a certificate of sickness at the end of every week, as a rule not before Friday.

Control Inquiries.—The time and place of the control inquiries respecting patients unable to follow their employment will be communicated to the treating doctor beforehand, and it is permitted to him to attend. If he, the treating doctor, does not agree with the results of the inquiry and is not satisfied with the action taken by the society, he shall inform the latter of the grounds of his objections. If an agreement cannot be reached between the confidential medical adviser and the treating doctor, the patient shall be sent by the society to a medical arbitrator, whose decision shall be final. These arbitrators shall be annually appointed by the committee of the society in agreement with the Representative Medical Committee, and an arbitrator and a deputy shall be appointed for each specialty in which question may arise.

The services of the arbitrator may also be requisitioned by the society in cases in which a member who has been certified able to work strongly declares his inability, and this notwithstanding that the treating doctor and the confidential medical adviser agree on the case.

ADDITIONAL BENEFITS

The insurance of dependents mentioned here ranks among the additional benefits for which the law provides. A sickness fund desiring so to extend insurance must adopt a rule to that effect which may provide for the granting of family benefits generally or only to those members who especially apply. Where sickness funds provide family benefits, they either pay the doctor an inclusive fee for his attendance on family and dependents, if any, or separate fees for members and families. The former method of payment appears to be the more common, and the effect of this arrangement is that the accounts of sickness funds seldom afford any indication as to the actual cost to members of attendance on dependents. The medical benefits to dependents are limited in some instances to ordinary attendance; in others, drugs are given in addition, and some even give appliances. The benefits are given, however, for thirteen weeks only instead of twenty-six applicable to members. Sometimes hospital treatment is given or a contribution is made toward its cost.

Family insurance seems to be common in Leipzig, Stuttgart and Dresden, but rare in Berlin. Of twenty local sickness funds for large towns, twelve give and eight do not give family benefits. Of twenty-three important factory funds, each having over 1,000 members, eleven give and twelve do not give this benefit. The foregoing twenty local sickness funds had, in 1911, an aggregate membership of 1,218,048; those with family benefit having 740,000 members, or 60.8 per cent., of the whole, and those without family benefit having 337,000 members, or 22.9 per cent., of the whole. The factory funds had an aggregate membership of 140,223; those with family benefit having 86,636, or 61.8 per cent. of the whole, and those without family benefit having 53,517, or 38.2 per cent., of the whole. Combining the two groups of funds, 60.9 per cent. of their members received family benefit and 39.1 per cent. did not. This is too small a number from which to draw any general conclusions as to the extent to which family benefits are given throughout Germany, but are given as types.

The amount of medical attendance necessary where family insurance is provided is probably determined more by the definition of the term "dependents" than by the duration of medical benefits. Every sickness fund defines this term for itself. For instance, in Bremen the following dependents are given the foregoing insurance: wife or husband and children, including adopted children; in Dresden, wife or husband, and children and stepchildren under 15 years; in Leipzig, wife or husband, parents, grandparents, parents-in-law and children under 16 years; in Stuttgart, wife and children under 14 years; in Remscheid, wife or husband or relative in charge of household, children and foster children, parents and parents-in-law, and in the case of unmarried members having their own households, the mother or sister in charge; in Essen (Krupp), wife, children and other relatives of member by blood or marriage resident with him and wholly or mainly dependent on his earnings, but not a housekeeper or a servant.

An estimate of the cost of medical attendance per head on members and dependents together can be made, but no accurate data are available to separate the difference between the dependents and the members where such additional benefits are given. The data[7] available, however, seem to justify the assumption that one third of the members of the large federations of sickness funds, formed for miscellaneous trades and occupations, are married, and that three dependents per household is not an excessive average. On this basis of computation where a sickness fund provides family insurance, any given number of members would double that number entitled to medical attendance. Applying this numerical test it is possible to form an approximate idea of the cost of attendance per person entitled to it. In 1911 the federation of local sickness funds at Leipzig, Dresden and Stuttgart, with an aggregate membership of 412,000, paid $1.82 per member for general treatment by general practitioners and specialists, exclusive of dental treatment. Counting one dependent extra for every member, this would be equal to about 91 cents per individual entitled to attendance. On the other hand, eight other important sickness funds dealt with in this report paid separate fees for attendance on dependants, the mean rate being $2.06 per family exclusive of the insured head. Assuming an average of three dependents per family, the cost per individual would be 68 cents.

There is considerable variation in the cost of medical attendance in Germany between sickness funds of the same type and also those of different localities. In Berlin, where attendance to members only is provided, the cost of attendance by general practitioners and specialists, dental treatment being excluded, ranges from 91 cents to $1.15 a head; and the mean rate expenditure on this point of six important funds is $1.08 per head. In other parts of the country the cost of similar attendance for members only ranges from $1.095 in the case of the Frankfort-on-the-Main Federation of Sickness Funds to $1.43 in the case of the Munich federation and $1.44 in the case of that at Düsseldorf. Similarly, the cost of ordinary medical attendance where dependents are treated ranges from $1.40 per member in Dresden, where the system of district doctors with fixed salaries prevails, to $2.065 per member in Leipzig, where the doctors are engaged on the organized free choice principle.

The data available indicate that the extension of medical treatment to dependents greatly swells the drug bill. In Leipzig of a total payment for drugs and dressings 39.5 per cent. was incurred on behalf of dependents; in Stuttgart, 43 per cent. on account of dependents.

REMUNERATION OF PHYSICIANS

In considering the methods of remuneration of physicians which had been adopted under the German sickness insurance law, it has to be remembered that the practitioner does not dispense his own prescription but refers his patients to the pharmacist of his choice. Another thing to remember is the existence of official scales of medical, surgical and dental fees for use in the absence of agreements for fixing a minimum and maximum charge, as a rule within a very large range. The government of each state has the right to use an independent scale of charges, and while the larger states—as Prussia, Bavaria, Wurttemberg, Saxony and Baden—have their own scales, many of the smaller states adopt the scale of Prussia. In some towns the doctors, when organized, agree to the modification of the official scale, but they cannot increase the minimum fees. The law requires that these minimum fees

7. National Health Insurance, Cd. 6581.

must be charged to workmen's sickness insurance funds, poor law administrations and poor persons.

Each sickness fund has an entirely free hand in the method of remunerating the physicians. The law does not set the amount of payment, although in the absence of formal agreement with the physicians it follows that payment will be by attendance according to the minimum fees of the official scale. The adoption of this scale as the basis for payment or for the division of the medical remuneration fund is one of the demands on which the medical profession, as organized on the Leipzig basis, is most insistent. In few towns is the system of medical remuneration uniform. Owing to the multiplicity and diversity of the sickness insurance societies, each independent and free to make its own arrangements with the physicians, various systems exist side by side. Whatever the method on which the physicians are paid, no restriction is made on private practice, and if physicians devote their whole time to attending members of the sickness funds, and this is often the case, it is done voluntarily.

The various methods of remuneration are as follows: Payment by attendance; under this system the fees charged are as a rule the minima of the official scale, though in some cases a reduction is made on these minima in the case of often recurring services; or, again, an agreed reduction varying from 10 to 20 per cent. may be allowed on all official minimum fees alike. Here the position of insured persons is exactly like that of private patients. The only large federation of sickness societies known to pay its medical staff unconditionally on this principle, though there may be others, is that of Bremen with a membership of about 30,000. On the other hand, the unattached factory and trade guild funds of the town very commonly pay the physicians on this principle. In the rural districts the plan of payment by attendance is common and often found to be a condition of efficient medical service or any service at all. In Stuttgart the factory and guild funds, as a rule, pay for all attendances at the minimum rates less a deduction of 20 per cent. and this is the case with many of these funds in Munich. In Leipzig the reduction is usually 5 or 10 per cent.

The sickness fund federation in Bremen serves for all trades and occupations and includes also most municipal work people. Voluntary arrangements are made for the treatment of dependents; 3,000 members paid special contributions for family treatment in 1911. All services of general practitioners are paid for separately, according to the schedule of fees embodied in the agreement with them. Specialists are not paid by agreement. The average inclusive cost of medical attendance for members only, in 1911, was $1.522, made up of $1.004 for general practitioners, 31.4 cents for specialists and 20.4 cents for dentists, etc. The cost of medicines and appliances for members only was 97.6 cents a head, and hospital treatment cost $1.474 a head. Although there are striking exceptions, it is found that sickness funds which pay the physicians by attendance without the common device of a pooled capitation payment, limiting their liability in advance, have to spend more on medical treatment than those which stipulate for this protection. Where in Munich sickness funds pay for medical attendance according to the minimum rates of the official scale, the cost per member usually ranges from $2 to $2.50 per annum; where the system of remuneration is a pooled capitation payment plus fees for special services, the cost usually ranges from $1.43 to $1.87 per member, and where the capitation fee includes all services, the usual cost is $1.50 per member.

In other towns it was possible to compare the experience of funds which under pressure had changed the method of a pooled capitation payment for that of payment according to attendance without limit. In the case of a large factory fund the effect was an increase in the cost of medical treatment from $2.33 per member, including attendance on dependents, on the average of the years 1906-1908 to $3.95 on the average of 1909-1911. The cost of medicine and appliances also increased from an average of $1.31 to $1.44 per member, while the cost of hospital treatment remained unchanged. Conversely, a fund which sometime ago commuted its payment for special services into a fixed annual sum finds that by so doing it has prevented an increase of 40 per cent. in that item.

CAPITATION FEES TO THE INDIVIDUAL PHYSICIAN

Under this system each physician engaged receives a fixed fee per head per year in respect of all insured persons whom he undertakes to attend, with or without certain special services according to the terms of the agreement. If there be a choice of physician, it is made at the beginning of each year. This is the method of remuneration adopted by the miners' societies in Prussia and by some of the railroad employees. It also occurs in many factory funds. The specialists were paid $1.62 or $2.50 for the treatment during six months, if necessary, of each case referred to them by a general practitioner, the lower fee being paid to oculists and the higher to the specialists for ear, nose, throat and genito-urinary diseases. Surgeon dentists are paid $1.25 per case, this fee covering six months' treatment if necessary. Each general practitioner is appointed to a district, and capitation fees are paid to him for all the insured miners in the district.

In Cologne the State Railroad Board pays the physicians on the same system. The physicians are appointed for fixed districts. In the towns of the district the insured persons have free choice; in the rural districts they call in the nearest physician. The general practitioners are paid as a rule $1 each for single members, with modifications according to local circumstances; for married members $1.75, with additional fees of $3.50 for confinements, night visits $1.99, night consultations 50 cents, and for assistance to other physicians and attendance on members of other sickness funds. A physician also receives a free ticket entitling him to travel second class by all trains within his district. Specialists are paid the minimum fees of the Prussian official scale.

Capitation payments into a pooled fund, with or without extra fees, for prescribed reserved services is another system. The pooled fund is divided among the physicians according to the services performed, and the extra fees are paid to the physicians who have earned them. In some cases special fees are deducted from the pool before it is divided. The physicians usually are paid quarterly, the capitation fees being based on the monthly average membership figure reckoned for each quarter separately. This method is the most frequently adopted. From the point of view of the sickness funds it has the advantage that liabilities can be estimated in advance within narrow limits from year to year and their budget arranged. From the standpoint of the physicians, remuneration is proportionate to services performed. The extra services most commonly paid for are obstetric services, night and urgent visits, attendance on members of other sickness insurance funds, and sometimes mileage allowances are added to these extra services. Where a sickness fund pays for operations outside the pool, it is usually stipulated that extra charges shall be paid only for services carrying minimum fees in excess of 75 cents or $1, according to the official scale.

The Munich Federation of Sickness Funds with a membership in 1911 of 136,477, which does not provide family benefits, pays a capitation fee of $1.06 and in addition pays for all operations carrying fees from 75 cents upward, according to the official minimum rates. These special fees are laid down in an exhaustive schedule and are in some cases below the official minimum. The total cost in 1911 of all medical attendance, including dental treatment, massage, etc., was $1.658 per member. The Stuttgart Federation of Sickness Funds, with an average membership in 1911 of 89,777, which provides attendance to all dependents, pays capitation fees of $1.072 and $1.25 for single members and $2.68 to $3.75 for married members, these fees being pooled, and extra fees to the physicians earning them for operations and certain special services. But all operations carrying a fee in excess of $3.75 are performed in the municipal hospitals. The total cost of medical attendance cannot be separated as between members and dependents, but togther it averaged, in 1911, $2.41 per member.

The Essen Federation of Local Sickness Funds, with an average membership of 27,158 in 1911, though paying nominally under a pooled capitation fee arrangement, guarantees to the physicians remuneration equal to 90 per cent. of the value of their individual services based on the rate of 25 cents for a consultation and 37 cents for a visit. The pooled capitation payment is now 87 cents in respect of general practi-

tioners and 7.2 cents in respect of specialists, or together 94.2 cents with $1.87 extra where attendance is given to dependents, family insurance being voluntary. The total cost of medical treatment, including 1,300 families, was $1.29 a head; the cost of medicine and appliances 85 cents, and the cost of hospital and other institutional treatment $2.22.

In Düsseldorf the capitation payment is based every year on the average value of the services performed during the three preceding years when charged according to an agreed scale of fees. On this sliding scale of payment, the capitation payment ranges from $1.50 to $1.62 without family attendance.

PAYMENT PER CASE OF SICKNESS ATTENDED

This is an uncommon method of remuneration, adopted under special conditions which make the other methods inapplicable, though pooled funds are often divided on this principle. The Frankfort Federated Sickness Funds use this method in treating their members in the rural districts. The fee in this case is $1.25 per case of sickness subject to the conditions that for this fee a patient must be attended for twenty-six weeks if necessary, and that three cases of sickness at the most may be charged for in one year in respect of the same member. Specialists also are paid by this method; for example, the specialists who attend the members of the General Miners' Sickness Fund at Bochum in Westphalia. The Bochum Sickness Fund formerly paid specialists $2.50 per case attended, but at present pays by a pooled capitation system of 7.2 cents per member, being the ratio per member set aside by the fund for this payment.

Payment by fixed salaries is an unusual method of payment, although adopted by some sickness funds and by some of the miners' funds. The Dresden Federation of Sickness Funds is the best known example of this, which had an average membership in 1911 of 127,938 and which gives medical attendance, without medicine or appliances, and partial hospital treatment to dependents. The area served by the Dresden fund is divided into 160 districts of unequal extent, and a physician is assigned to each district. The insured persons in a given district are expected to consult the physician in that district. In case of dissatisfaction, their wishes are considered as far as possible. All appointed physicians, as a matter of fact, engage in private practice. Salaries range from $1,250 a year to $150. The only extra payments are fees for night visits in special cases of 75 cents and mileage in the case of rural physicians, and also all dressings and drugs needed by the physicians as distinguished from those prescribed.

In the beginning of 1912 there were 109 town physicians engaged by this federation, fifty-four country doctors, sixty-five specialists, with two whole-time confidential or certifying physicians. The salary of town physicians in 1911 averaged $939, the country physicians $377.75, and the specialists $754.25. The total cost of medical attendance, including attendance on dependents, averaged $1.592 per member, the cost of medicine and appliances as supplied to members only $1.106, and the cost of hospital and institutional treatment, only partially given to dependents, $1.322. Some towns vary the Dresden system by guaranteeing the physicians appointed a minimum salary with an addition depending on the number of their services.

The plan of employing whole time physicians at fixed salaries has been adopted at different times and places, but only experimentally. At Remscheid, in Prussia, it was tried from 1898 to October, 1905. Six physicians were appointed to attend about 10,000 members and their families, but the number was later increased to eight. These physicians were paid fixed salaries of $1,500, increasing to $1,750, except an eye and ear specialist, who received $1,750, increasing to $2,000. Each physician had an assigned district, but in case of excessive work a physician could assign to a colleague. During the time this method of appointing and remunerating physicians was in force, the cost of medical attendance, including attendance on dependents as stated, ranged from $1.436 to $1.814 per member. During 1905 the system of limited free choice of physicians was introduced with payment out of a pooled fund according to the number of cases attended. In Table 4 is given the cost of attendance for members and dependents from 1896.

In medical benefit associations in several towns—Berlin, Munich and Cologne, for instance—groups of sickness funds have established associations for the provision of medical attendance, with or without medicine and appliances, independently of the other benefits secured to insured persons by statute, leaving these other benefits to be administered by the affiliated funds in the usual way. An old established association of this kind in Berlin, comprising forty-eight sickness funds with an aggregate of 191,000 members, administers all the statutory medical benefits on behalf of the affiliated funds; but while it concludes agreements with and pays the physicians, the cost of medicine and hospital treatment is paid direct by the funds concerned. Attendance on dependents is not provided. The city and suburbs are divided into medical districts, and at least one physician is appointed for each at a fixed salary. In 1912 the number of physicians was 200, of whom 160 were general practitioners and 40 specialists. All members are free to consult any physician on the list, but if visits are desired, a physician of the neighborhood must be called in. The affiliated sickness funds paid to the association for medical attendance 93 cents for each member, and the physicians received on an average a salary of $750. The physicians were free to attend members of other sickness funds.

A somewhat similar association in Munich undertakes to provide medical attendance for twenty-six weeks, exclusive of medicine and hospital treatment, on behalf of a number of factory and other sickness funds. It deals with a membership

TABLE 4.—COST OF ATTENDANCE FOR MEMBERS AND DEPENDENTS

Year	Amount	Method
1896	$1.048	Limited number of physicians paid by pooled capitation fee, plus extra fees.
1897	1.422	
1898	1.44	
1899	$1.52	Whole-time physicians, paid fixed salaries.
1900	1.546	
1901	1.446	
1902	1.476	
1903	1.388	
1904	1.658	
1905	1.814	
1906	$1.93	Free choice among all organized physicians, and payment by case from pooled fund, with special fees.
1907	1.956	
1908	1.926	
1909	1.968	
1910	1.966	
1911	2.02	

of 26,000, with about 44,000 dependents; $1.31 a head is paid for individual members, and $2.75 for dependents, wife and children, with no extra payments for operations. The physicians are paid by a pooled capitation system according to the services they perform. Office visits are reckoned as worth 18 cents, house visits at 50 cents, and operations according to the Munich schedule of medical fees. In the early days of compulsory insurance in Germany, some of the largest funds were able to obtain medical attendance at a cost of 25 cents a head. In 1891, when the Berlin free choice association of physicians was formed, the average cost was 39 cents per member. The largest of the Berlin sickness funds, that for commercial employees, working under a system of district physicians, did not for several years pay more than 25 cents per head for medical service; in 1894 it was paying 75 cents; from 1902 to 1909 the pooled capitation fee was 81 cents, with fees for a few special services, although in the meantime the duration of treatment had been doubled, and in 1912 the capitation fee was $1; and, exclusive of dental treatment and massage, in 1911 the total cost of medical treatment was $1.074 per member.

SCOPE OF TREATMENT

This increase in the cost of medical treatment has been due only to a certain extent to the higher fees paid to physicians. The main increase has evidently been due to the broader scope of treatment due to the progress of therapeutics, to the extension of treatment by specialists, and to the increased recognition by the working classes of the importance of health and their willingness to make large sacrifices to obtain it.

The sickness funds are usually disposed to give a very liberal interpretation to medical treatment. The treatment by specialists under most funds depends on the recommendation

by the general practitioner first consulted, but in some towns, such as Munich, members are allowed to go directly to any specialist on the medical list without previous recommendation. Specialists with whom the large sickness funds conclude agreement are those for eye, ear, nerve, skin, throat, stomach and women's diseases. Medical treatment often comprises Roentgen-ray applications, electric treatment, mechanical exercises, such as the Zander institutes, and the like. In 1912 the central committee of the sickness funds of Berlin completed the equipment of an establishment for general use, including Roentgen-ray, hydrotherapeutic, electric and physical treatment on a large scale, and in the course of the first fifteen months, 6,800 persons were treated. Some of the large federations of sickness funds, like those of Leipzig and Dresden, have well equipped rooms attached to their central offices in which mechanical treatment is given in the most approved methods. The large sickness funds in the towns also provide their sick members with medical baths of great variety.

The accident funds also are insisting more and more that they shall take charge in the early weeks of many of the fractures and other injuries in order that they may obtain, by proper surgical care and exercises, better results and less total permanent or partial disability. The treatment of teeth is usually regarded as falling within the scope of medical benefit, but artificial teeth are seldom provided, though some funds make a contribution toward their cost. Some large federations of local sickness funds, like those of Stuttgart and Düsseldorf, have their own dental clinics, equipped and worked at great expense.

The drugs which may be prescribed by authorized doctors include not only all the drugs scheduled in an imperial rescript as being reserved for sale by qualified pharmacists, but also medicaments in general. The rules of some sickness societies prohibit the use of drugs, the therapeutic value of which has not been sufficiently proved, and of certain expensive drugs. There are certain rules, and definite care is required of the physicians that they shall prescribe economically, and the medical controlling committees criticize closely the economy or lavishness with which the ingredients of prescriptions are chosen. In Frankfort all physicians about to enter the funds must spend six months in attending the meetings of the committee, during the sessions of which discussion of prescriptions takes place. The appliances usually given include trusses, spectacles and similar appliances. There may, however, be provided larger appliances in the way of additional benefit. When this is done, a limit, of course, is usually fixed. The Berlin local sickness fund for commercial employees, in addition to minor appliances, supplies artificial limbs, appliances for flat feet, corsets and other supports to a maximum cost of $12.50 for any one person. The sickness fund of the General Electric Company of Berlin supplies artificial limbs to the amount of $12.50 for any one person. The Leipzig federation of sickness funds provides artificial limbs and teeth and other larger appliances to a value of $18.75 for any one person. Some funds leave a provision for larger appliances to the discretion of the executive. The law of 1911 uses the term "other minor appliances" instead of "similar appliances." It empowers sickness funds to supply appliances to cripples to enable them to obtain employment, to fix a limit of value up to which minor appliances are provided, and to contribute up to that amount toward the cost of more expensive appliances.

HOSPITAL AND INSTITUTIONAL TREATMENT

Although hospital treatment as an alternative to home treatment now ranks as a minimum benefit, the law reserves to sickness funds an unconditional right to decide as to whether the alternative shall be offered or not. Hospital treatment, however, is very widely given, and the expenditure under this head forms an important part under the cost of medical benefits. The provision of hospitals is, in Germany, a duty of the local government authorities, and the public hospitals are used for the great majority of patients so treated. In the larger towns a certain proportion are treated in institutions managed by ecclesiastical bodies, and in state, university and private clinics. Such treatment is usually made dependent on the prior consent of the executive of the fund except in urgent cases. Hospital maintenance is paid for by fees which usually vary from 50 to 75 cents per day both in public and in private institutions. Sometimes sickness fund patients are treated in public hospitals at bare cost or even under cost. There is no extra charge for operations in public hospitals, but in private clinics these are generally paid for extra.

Pension boards which administer the invalidity insurance law supervise the sanatorium treatment under the German insurance system. As a rule a sickness fund and the pension board for the district agree to bear a portion of the cost of their institutional treatment. The cost of curative treatment of all kinds given by the pension boards of Germany in 1910 amounted to over $6,000,000, and after the deduction of all refunds, the cost to the pension boards themselves was $5,250,000.

The large sickness funds themselves do a similar curative work, and this is one of increasing importance. Thus the Leipzig Federation of Sickness Funds has the use of five sanatoriums and convalescent institutions, to which 3,038 patients were sent in 1911, while 2,602 of its members were sent to baths and health resorts. The Düsseldorf fund has a convalescent home, and other large funds are in the same position.

MEDICAL BENEFITS IN NORWAY

In Norway the local insurance societies are required to render the following aid: to a member himself free medical attendance and the first supply of such accessories as eye glasses, trusses, etc., and when surgical treatment is required, bandages and the medicaments required for such treatment according to the surgeon's order. In cases of sickness coming under the accident insurance law, free medicine; in cases of invalidity, pecuniary aid equal to 60 per cent. of the average daily wages of one of the four income classes defined in the law; but the pecuniary aid, together with any payment the person concerned receives for work during his sickness, or with any pecuniary aid he may receive from private sickness insurance, shall not amount to more than 90 per cent. of his actual income at the beginning of his sickness. For persons who work for no wages and voluntarily insured persons who have no income, the total pecuniary aid shall not amount to more than 16 cents per day. In the case of confinement, pecuniary aid for six weeks and, if necessary, physician's attendance. These grants are made on condition that the woman has been a member of a public or recognized private or communal sickness society for at least ten consecutive months immediately preceding. If sickness results, the usual sickness aid shall be given in place of the confinement aid. Burial aid equal to twenty-five times the average daily wages in the income class concerned, but not more than 50 crowns, or $13.40. To the wife or husband of the member for whom he or she provides, and to children under 15 years living at home, free medical attendance only.

In place of the benefits just mentioned, hospital or asylum care may be given by the advice of the physician. In the case of an industrial accident, the Royal Institution of Insurance may, in accordance with the industrial insurance law, require that this be done. During a person's care in a hospital, no pecuniary aid is given to him. If he has relatives dependent on him, they are given pecuniary aid equal to 20 per cent. of the average daily wages if there is only one dependent, 35 per cent. if there are two, and 50 per cent. if there are three or more.

Money benefit is paid for six days in the week while the person is incapacitated for work, but not for the first three days of sickness and not to exceed twenty-six weeks in any one case of sickness. A recurrence of the same sickness in the year is regarded as a continuation of the first case, and pecuniary aid shall not be given for more than twenty-six weeks altogether. If a member has received pecuniary aid for twenty-six weeks, he shall not receive pecuniary aid for more than thirteen weeks for new attacks of the same sickness during the following year; but if no such attack occurs during this year, a subsequent attack is regarded as a new case and treated accordingly. If, for the same case of sickness, a member has received aid for the thirty-nine weeks altogether, he shall receive no more aid for this sickness until two years have expired and he has been during this time free from the sickness in question. Every day in the hospital is counted as one day of pecuniary aid.

In the case of sickness due to industrial accident. the local sickness society is not required to give assistance for more than four weeks, but the national society, that is the Royal Institution of Insurance, may require that aid be continued beyond this time with the assurance of reimbursement by the royal institution from the funds of accident insurance. In case of an injured person who did not have sickness insurance at the time of the accident and is not assured of full wages for three months, the Royal Institution of Insurance may require that the local society shall care for such person on the conditions mentioned above. If a workman, while temporarily employed in a foreign country, is entitled to aid under this law, his employer is under obligation to render this aid himself and he shall be reimbursed by the local society. If a servant is receiving care in sickness in the home of his master, the latter receives the pecuniary aid due the servant under the law. The master must give such servant care for six weeks unless the sick person can, with the approval of a physician, be put into a hospital.

BENEFITS IN ENGLAND

Under the present English law the benefits conferred on insured persons are of two kinds: the minimum benefits to which, with certain qualifications, every insured person is entitled, and the additional benefits to which an insured person may be entitled if he is a member of an approved society which shows a surplus on valuation. In each case a contribution of two ninths in the case of a man and one fourth in the case of a woman will be made by Parliament toward the cost of benefits. The minimum benefits are, first, medical benefits, that is, the right throughout life to free medical attendance by any physician who applies to the insurance committee for the county or county borough in which the insured person resides for a place on their list, and who consents to accept him as a patient. If the physician of his choice refuses him, he will be assigned by the committee to one or other of the physicians on the list. Medical benefit includes free medicines and drugs, and such appliances as the insurance commissioners may allow. It does not include any right to attendance in respect of a confinement. As one of the additional benefits, the right to medical treatment may be extended to the dependents of an insured person. Second, sanatorium benefit, which is the right throughout life to treatment in a sanatorium or otherwise for an insured person suffering from pulmonary tuberculosis or any other disease which the local government board may appoint. The insurance committee which administers this benefit may also pay or advance the traveling expenses of an insured person to and from the sanatorium. This benefit may be extended to his dependents if the sums available for it allow, independently of any surplus in the member's own society. Third, sickness benefit: a payment of $2.50 a week for a man and $1.87 for a woman beginning on the fourth day of illness and continuing for twenty-six weeks; notice of the illness must be given before the claim can be allowed. An insured person will not be entitled to this benefit until twenty-six weekly contributions have been paid in respect of him, and it is this benefit which, in the case of a member of an approved society, will be reduced if he is in arrear. Fourth, disablement benefit, which is a continuation of sickness benefit at the rate of $1.25 a week for a man or woman, lasting as long as the illness. The right to this benefit does not accrue until 104 weekly contributions have been paid in respect of the insured person, but both sickness and disablement benefit will become payable as soon as the necessary period has elapsed and the necessary contributions have been paid, although the illness began before that time. The right to both of these benefits ceases at the age of 70. The test for both of them is that the claimant must be rendered incapable of work, that is, of any work whatever, by some specific disease or by bodily or mental disablement; but any disease or disablement in respect of which he is entitled to compensation or damages from his employer or any other person under the workmen's compensation act of 1906, or the employer's liability act of 1880, or at common law, is excluded. In that case, however, his society or insurance committee may assist him to enforce his rights. Any approved society may substitute for sickness or disablement benefit or part of them any of the additional benefits, and may give its members an option in the matter. Fifth, maternity benefit, which is a payment of $7.50 in the case of confinement of the wife, or where the child is a posthumous child, the widow of an insured person, or of any other woman who is herself an insured person. Where a married woman, or in the case of a posthumous child, a widow, is herself an insured person, she will be entitled to sickness or disablement benefit as the case may be during her confinement, in addition to her maternity benefit; but any other woman, that is, any unmarried woman, will not be entitled to those benefits for four weeks after her confinement unless suffering from some illness not connected with it. The right to maternity benefit will not accrue until twenty-six, or in the case of a voluntary contributor fifty-two, weekly contributions have been paid. The benefit will be administered in cash or otherwise at the discretion of the society or insurance committee concerned, but in every case the mother will have the right to choose a physician or midwife to attend her whose fee must be paid out of the $7.50 benefit.

Sickness, disablement and maternity benefits will not be paid to a person in a hospital, infirmary or sanatorium, but may be applied for the maintenance of his dependents, if any, or if he has none, may be paid for the upkeep of the hospital or infirmary, or, in the case of a sanatorium, to the insurance committee. Where a married woman who is herself insured and entitled both to maternity and sickness or disablement benefits goes into a hospital or infirmary for her confinement, the maternity benefit will be paid to the hospital or infirmary, but the sickness or disablement benefit will be applied for the maintenance of her dependents, if any.

Besides minimum benefits, there are additional benefits which an approved society can give to its insured members if at the end of each three years it is found to have a surplus available. These include an increase of the minimum cash benefits, allowances for partial disablement and during convalescence, pensions, distress payments, and remission of contributions, but not death benefits. It can give him, in fact, all benefits that the money will pay for, that is to say, all benefits which can be given to a man joining at 16 and paying a contribution of 14 cents a week, the amount depending on the management of the society and the health of the members.

Finally, there is a prospect of extended benefits at the close of a period of eighteen years. To the worker who joins as a young man and who does not expect in the course of nature to draw heavy sick pay before reaching the age of 40 or 45, this prospect of extended benefits is of real value. The fact is that for a period of eighteen years a part of the contributions goes to a fund for equalizing the benefits of old and young; at the end of that time, when the process of equalization is complete and the fund provided, the whole of the contribution of 14 cents a week and the whole of the state grant of 4 cents will be available for the purpose of paying benefits unless some further small accumulation is made and the benefit so extended will be paid to insured persons when the period is complete. It is important to remember that all these benefits are guaranteed, within limits, to members of approved societies only. The deposit contributor will get only benefits to the extent of his balance at the postoffice, plus the state grant, and is therefore not really insured. The position of deposit contributors must be reviewed by Parliament before Jan. 1, 1915. Whether, owing to the war, this was done or not, it is impossible to say.

There are, however, six classes of insured persons, in addition to those already mentioned, who will not receive all the benefits in full. First are persons under the age of 21, not married, and having no members of their families dependent on them; second, employed contributors who become insured within one year after the commencement of the act and are then over the age of 50; third, employed contributors who enter when above the age of 17 after one year from the commencement of the act; fourth, employed contributors whose employers with or without their consent exercise the option of undertaking the liability to pay full wages during about six weeks of sickness. During the six weeks, when full remuneration is received from the employer, no sick or disablement pay will be due to the insured person, but it will begin when the liability of the employer ceases. Fifth, those of men over 65 and under 70 at the commencement of the act; sixth, those of aliens.

All these six classes have certain qualifications and certain conditions under which they are partially insured, the details of which are unessential for the purpose here and must be obtained from the act itself.

WORKING OF THE BRITISH NATIONAL INSURANCE ACT

There is a great advantage in studying the workings of the English sickness insurance law. We are able to study a law which is in the process of reaching its equilibrium. To obtain this equilibrium there has been an intense and bitter fight of the medical profession for its rights, for the government was endeavoring to bring the insurance act into operation without consultation with the profession whose duty it was to administer it. To appreciate what it means to administer such a huge machine as this government insurance scheme is, a statement of the Committee on Inquiry instituted by the Fabian Research Department in July, 1913, is very instructive:

"The immense organization required for issuing the benefits to these 13,700,000 of insured persons, of whom nearly 11,000,000 are in England, appears—so far as the actual payment of the money by the approved societies is concerned—to be working on the whole with a fair degree of efficiency. We gather that in the aggregate something like 80,000 new claims per week are made in the United Kingdom for sickness benefit and 18,000 for maternity benefit on the 23,500 approved societies and autonomous courts, lodges or branches; and that the total number of claims paid, new or old, for both benefits amounts each week to between $1,250,000 and $1,500,000, representing a total payment that often exceeds $750,000 in a single week. The 23,500 societies, lodges and courts evidently differ greatly in the rapidity with which they deal with their claims, the stringency of the examination to which these are subjected, and the promptitude with which the decision is carried out. But regarding England as a whole, with respect at any rate to four fifths of the cases, the large sum involved is being got into the hands of the sick persons, and in the case of maternity benefit now into the hands of the mothers themselves, with commendable regularity and promptitude. The doctors, after some initial objections, are now giving their certificates without charge in terms enabling the great majority of the claims to be at once admitted."

The last sentence is equivalent to saying that the individual animosity and antagonism to the insurance act among the physicians has practically subsided. To understand the antagonism with which the insurance act was received in England by the physicians, one must understand the situation that existed previous to the passage of the act and also some of the contentions that arose before the act went into effect.

CONDITIONS BEFORE THE ACT

About ten years ago it became very evident in England that the circumstances under which the general practice of medicine could take place were rapidly becoming less and less advantageous to the profession.[8] The result of preventive medicine and public hygiene had brought about such a diminution of the infectious diseases that there was a very noticeable diminution in the income and in the medical practice from these sources, especially since in a vast majority of these cases, when they occurred, the patients were sent to isolation hospitals to be cared for and were not kept in the hands of the practitioners. It is said that where many practitioners among the poor had ordinarily received $700 or $800 a year from this source alone, they now hardly receive $50 a year. It is also said that twenty years ago the obstetric practice of a general practitioner was an important part of his income, and that at that time it was thought that 70 per cent. of the confinements were attended by physicians. At present, especially in the large towns, 80 per cent. of the confinements are attended by midwives, and even when physicians are called in, the fees are much lower than they formerly were. Not only had it become noticeable that practice among the poor meant very small fees with many bad debts, but also it was well recognized that the poor could not pay for their medical services without crippling themselves for many months to come after any illness of more than ordinary length. This had caused various forms of clubs, associations and medical benefit societies to spring up, and what had been undertaken in many instances as part charity had become settled as a method of taking care of the poor, the medical fees for which were notoriously inadequate for the services rendered. Lodge practice and club practice were so prevalent that the British Medical Association undertook to investigate the situation, and made a report in 1905. It is evident from this report that the usual method of payment was by capitation with all its usual evils, inadequate payment for excessive work, and the resulting poor medical return to the patient. This, in return, placed the club physician on a contemptible footing, and if anything serious was the matter, in which an ordinary fee would be paid, the patients invariably sent for what they called a "proper doctor." There was no possible security of tenure of the position as physician to these lodges, and physicians were under lay control and were liable for the most trivial causes to be dismissed. As the complainants were also the judges, physicians were dismissed for what patients considered to be harshness when the physician was often conscientiously endeavoring to prevent malingering. The remuneration in the lodge practice was difficult to obtain, but in 269 clubs providing attendance for males only, records were kept, and Table 5 shows the results.[8]

The average fee obtained, according to this table, per visit is almost exactly 21 cents, and each club member on the average had been attended four times during the year. This table does not take in the attendance for giving of certificates for unfitness to work, as the physicians did not keep record of these visits because they did not charge for them, but making out certificates, as is well known, is time consuming. It was further stated that most club physicians did not keep record of attendance on club patients when no medicine was given, so these statistics are understatements rather than overstatements of the situation. Moreover, when the club or

TABLE 5.—REMUNERATION IN LODGE PRACTICE BEFORE THE NATIONAL INSURANCE ACT, 1911

Annual Capitation Fee	Members	Average Capitation Fee	Average Attendances per Member per Year	Average Fee per Attendance
$0.50 to $0.75	9,630	$0.59	$3.59	$0.159
.75 to 1.00	9,311	.81	3.67	.211
1.00 to 1.25	17,741	1.02	4.46	.2196
1.25 and upwards	4,211	1.35	5.43	.2672

lodge only cared for the head of the family, the lodge physician had no guarantee, if he cared for the insured, that he would be called in to care for the rest of the family, because, as stated above, the lodge physician was looked down on even by the patients as being an inferior sort of doctor.

The reasons given for the hold the lodge practice had on the profession were the usual ones that the lodge work forms only part of the practice and can be done in the midst of the daily routine of visits, or that it is undertaken by beginners to gain a foothold and a living until they can obtain a better practice, and among the older practitioners it is done because, if they are willing to do it, there will be less likelihood of other physicians settling in that district and competing in other practice—all of these reasons being the practical, everyday economic questions of existence. One of the practical results of the investigation of lodge practice was that the contract practice committee of the British Medical Association had obtained the approval of the Representative Meeting, equivalent to the House of Delegates of the American Medical Association, to a scheme to establish what was called a Public Medical Service organized by the profession, and in a few towns, such as Norwich, a medical association on the Association lines was actually established by the medical profession and several such services successfully competed with the friendly society clubs. The lodge practice report of the British Medical Association contains a majority and a minority report. In the majority report the association recommended the extension of the contract system of the clubs, and while this was preferred rather than the minority report, the British Medical Association preferred the scheme as spoken of above which it itself had started, and had it not been for the appearance of the insurance law, this undoubtedly would have been put into effect. The minority report recommended that a unified medical service should be established under the control

8. Carr, Garnett and Taylor: National Insurance.

of the county and county borough public health authorities. It was felt that the minority proposal for a system of whole-time medical officers could not be confined to the poorer classes and that a free medical service open to all would result. The profession in general was opposed to this system because of the opposition which had arisen between the health officers and the general practitioners, and they feared that domiciliary medical attendance would arise under the control of the boards of health which the profession had universally so far opposed.

CONTROVERSY BETWEEN THE BRITISH MEDICAL ASSOCIATION AND THE GOVERNMENT

It was during the discussion of the majority and minority report that the principle of free choice of physician became prominent, and it was felt that any salaried public service would prevent this freedom of choice. When the insurance act was proposed, the British Medical Association presented six cardinal points which it considered as essential to be incorporated into the act. First, an income limit of $10 a week to those entitled to medical benefits; second, free choice of physician by the patient subject to consent of physician to act; third, medical benefit to be administered by insurance committees and not by friendly societies; fourth, method of remuneration of medical practitioners adopted by each insurance committee to be according to the preference of the majority of the medical profession in the district of that committee; fifth, medical remuneration to be what the profession considered adequate with due regard to the duties to be performed; sixth, adequate medical representation among the insurance commissioners on the central advisory committee and on the local insurance committees and statutory recognition of a local medical committee representative of the profession in the district of each insurance committee. Moreover, it was agreed by the majority of the profession, in the signed agreement with the British Medical Association, that they would undertake no medical service unless under such agreement as this.

Without going into all the details of the dispute, four of these six demands of the medical profession were granted by the government and incorporated into the act. The first one that the act be limited to patients having a maximum of $10 a week income was not granted; it was finally decided to include up to $15 a week. In the beginning the government contemplated allowing a capitation fee of $1.12, but after a final refusal by the physicians to act, and within a very few days before the act was to go into effect, the government compromised and allowed a straight capitation fee of $1.62; and this further sum could be increased by 12 cents per capita to any panel physician for treating tuberculous patients. A minimum capitation of 8s. 6d., or $2.12, was claimed, not including extras, medicines for members of approved societies; and the recognition of payment per attendance was also claimed, in which case the fees would be on the basis which should be deemed an equivalent to the foregoing by the State Sickness Insurance Committee with the recognition of a $10 maximum in a week income limit.

There was also an ingenious scheme put into effect to tempt the physician to be economical in prescribing drugs. The amount allowed for each patient was 37 cents per patient for drugs and appliances. There was set apart 12 cents for each patient which was called "the floating sixpense." If, by economical prescribing, the 37 cents was adequate for the drug bill, then the full 12 cents went to the physicians. If the latter by extravagant prescribing raised the drug bill higher than 37 cents per patient, then the excess was taken out of this "floating sixpense fund" and paid to the pharmacist, the remainder going to the physicians. The straight capitation fee, therefore, became $1.74 if a man took care of tuberculous patients, and a possibility of $1.86 if the physician attained the full amount of the "floating sixpense." The British Medical Association refused these demands, advising that the medical men should demand free choice of physicians with remuneration for attendance and not capitation. This the government refused. The second day after the act had gone into effect, 10,000 physicians had accepted service, and a week later 15,000 were on the panels. The British Medical Association acknowledged its defeat by releasing its members from their pledges, thus permitting any physician to enroll. This controversy between the British Medical Association and the government was, however, the cause of many of the difficulties arising in the administration of the act which might otherwise have been avoided, and produced regulations for medical benefit that were hastily drawn.

REGULATIONS FOR MEDICAL ATTENDANCE

The English act guarantees adequate medical attendance and treatment to the patient, but the panel physician contracts to give only such treatment as is of a kind which can consistently with the best interests of the patient be undertaken by a general practitioner of ordinary competence and skill, and, further, when the condition of the patient is such as to require services beyond the competence of an ordinary practitioner, the practitioner shall advise the patient what steps to take so as to obtain the treatment his condition may require. These medical regulations are made by the English Insurance Commission so they are uniform throughout England. On this basis, therefore, Roentgen-ray diagnoses, pathologic and bacteriologic examinations, major operations or other operations requiring an assistant in addition to the practitioner and the anesthetist are not included under these ordinary services. Any physician is not expected to render any service that an ordinary practitioner cannot render even if the doctor possesses the adequate skill. However, if an emergency arises which makes this extra service imperative, if the doctor is able to supply it, he is in duty bound to perform it. To all patients needing more than the ordinary care of the average general practitioner, the act and regulations simply provide that this general practitioner shall furnish advice as to how these extra services may be obtained; but there is no provision in the medical regulations or act for the furnishing of these extra necessary services. Herein lies a serious weakness of the English insurance act.

These regulations state that the normal method by which the insured persons may obtain their care and treatment is by the panel system. Every insurance committee is required to adopt this panel system unless the commissioners are satisfied, on inquiry, that it does not afford adequate medical service, when other medical methods may be adopted, provided these give as good service as the panel system should give. The insurance committees form the panels of practitioners. There may be formed by the committee different panels for each convenient district of the area under the committee. Every practitioner has the statutory right to act on any panel on the terms and conditions offered by any insurance committee in respect to that panel. The committee cannot exclude any practitioner or remove a practitioner. A practitioner may, if he sees fit, be a member of more than one panel. Thus a physician living near the boundary between two counties may be on the panel of each county. Every insured person who is entitled to attendance and treatment from the practitioners on the panel is free to select his own physician subject to that physician's consent. Those who make no choice and those who are refused by the physicians to whom they first apply will be distributed to the physicians on the panel. This distribution as far as practicable will be made by the practitioners on the panels themselves. Each physician must fix hours of attendance for seeing at some place appointed by him persons requiring his services, whose condition does not necessitate his visiting them. Practitioners in the district arrange with the insurance committee for an hour to be fixed on or before which messages for visits must be sent by the insured person whenever practicable. In a district where partial or complete payment per attendance is adopted, special fees will be paid for visits made in response to a message received after the hour thus fixed and on the same day on which the message is received. Physicians have to keep certain definite prescribed records, and each insurance committee makes provisions for the infliction of penalties on insured persons who make unreasonable demands on the physicians to whom they are assigned.

In 1912, disputes between two practitioners on the panel were referred to the local medical committee to take such action as they might think necessary. Questions arising

between physician and patient which cannot be adjusted through the principles of free choice and the physician's right of refusal of a patient may be referred by either party to the medical service subcommittee, which consists of three physicians chosen by the local medical committee, three insured persons and a chairman chosen from those members of the insurance committee who are appointed by the county or county borough council or from those appointed by the commissioners. If the insurance committee finds the insured person at fault, it may transfer him to another practitioner or fine him or, in the case of repeated offense, suspend him from benefit. If the practitioner is found at fault, the patient may be transferred to another practitioner, but the committee cannot remove the practitioner from the panel or inflict any penalty beyond the transfer of the patient. The removal of a practitioner can be made only after an inquiry conducted by a committee of inquiry especially appointed by the insurance commissioners for the purpose. This committee of inquiry must consist of two members of the medical profession and one barrister or solicitor in actual practice appointed by the insurance commissioners. The commissioners can proceed only on the result of such an inquiry.

After a year's working of the act it was found that this local medical committee, which was composed of all the practitioners in any county or county borough, was insufficient to give justice to physicians working on the panel, and a special panel committee was passed in the amendment to the national insurance act in 1913 and all questions regarding the attendance and treatment of the insured persons must go through this local panel committee. Where no other local medical committee had been appointed, this panel committee should be recognized as the local medical committee. It was further provided in 1914 that all disputes were referred to medical service subcommittees appointed by the insurance committees as follows: each committee to consist of three persons or, by consent of the insurance commissioners, five persons; one person appointed by the local medical committee and a sufficient number of the panel committee so that the representatives of the local medical committee and panel committee shall equal the number appointed by persons representing the insured persons, "provided that unless the person appointed by the local medical committee or one of the persons appointed by the local panel committee is a woman, at least one of the persons of the committee representing the insured persons shall be a woman; but the woman so appointed may be a person who is or is not a member of the committee." The chairman shall be selected from the members of the committee who are not insured presons, practitioners or registered pharmacists. Similar pharmaceutical service subcommittees are appointed for dealing with any complaint from a person entitled to receive treatment from a practitioner on a panel against a person supplying drugs or appliances in respect of the quality of the drugs or appliances supplied or in respect of the failure to supply such articles. These committees are made up of three members of the committee representing the insured persons and three members of the pharmaceutical committee. There is the same proviso that one member of this committee must be a woman. There are also provided the joint service subcommittees between the medical service subcommittees and the pharmaceutical service subcommittees. These joint service subcommittees deal with any disputes in which pharmacists or physicians are both involved. Questions arising between two practitioners involving questions of the efficiency of the medical service of insured persons still come before the local medical committee, not before the panel committee, and the local medical committee may request the commissioners to remove any practitioners from the panels. The panel committee has the further duty of investigating the character and amount of drugs and appliances ordered for injured persons by practitioners on the panel, and if it is found that the cost has been in excess of what may be reasonably necessary, the panel committee can recommend to the insurance committee the amount that should be recovered from the practitioner. This may be recovered by deduction from the amount payable to him in respect of any year, and the funds so recovered shall be paid to the practitioners' fund.

All decisions between the panel committee's subcommittees and insurance committees are subject to appeal to the insurance commissioners. If a question arises that a practitioner has failed to perform any operation or service which can consistently, with the best interests of the patient, be undertaken by a practitioner of ordinary competence and skill, the question should be referred to the local medical committee. If the local medical committee and the insurance committee cannot agree, the questions are referred by the commissioners to referees especially appointed. These referees shall be chosen as two practitioners selected from any panel of practitioners set up by the joint committee for the purpose, or if no such panel exists, from any practitioners in Great Britain and one barrister of law or solicitor in actual practice. The joint committee here referred to is the joint committee panel of insurance commissioners of England, Ireland, Wales and Scotland. The decision of these referees shall be final, and the referees in giving any decision shall state whether in arriving at their decision they took into consideration the practice and medical customs peculiar to the area in which the question arose. When appeals are taken to the commissioners, the commissioners may authorize any two or more of the commissioners to hear and determine questions or appeals, and any decision of the commissioners or any of them made under this article of appeal shall be final. The insured persons, unless through an appeal to the local committee, cannot change their panel except at the end of the year, and must notify the committee by the first of December of each year if they so desire to change. A practitioner cannot retire from the panel except at the end of the year, and must give notice not later than six weeks before the commencement of the year. If, however, a practitioner wishes to discontinue practice, he must give two month's notice or, by special arrangement with the committee, he may discontinue at shorter notice.

Any insured person may, on application, be allowed by the insurance committee to make his own arrangements for medical treatment, receiving from the medical benefit funds of the insurance committee of his area a contribution toward the cost. If the income limit has been fixed locally, those whose incomes exceed that limit will be required to make such arrangements if they desire to be insured.

METHODS OF REMUNERATION

Remuneration to the practitioners is made through the insurance committees. The method which is adopted rests with the insurance committee, subject to the approval of the insurance commissioners; but in practice it was decided in accordance with the preference of the practitioners on the panels, the amount received by each doctor depending on the method adopted. As a matter of fact, a straight capitation system has been adopted in all except Salford and Manchester, where a payment by attendance has been chosen. The methods permitted under the law are straight capitation, that is, so much per patient per year. This is simply for attendance on the insured person and does not include any income derived from attendance on wives and families of the insured, and on the uninsured classes. The physician is paid for the number of patients on his panel at a certain definite time, the payment for each quarter being the average of those on his list on the first day of the quarter and those on his list on the last day of the quarter. The regulations further provide, besides this capitation schedule called Schedule A, other schedules of B, C, D and E. Schedules B and C are schedules of capitation system plus the payment for special services, the details of the special service simply being different in the two schedules, Schedule C dividing more minutely than Schedule B the special work which, according to the schedules, should be left to the choice of the practitioners of the neighborhood. Capitation plus special services, however, can be regarded from two standpoints. They can be regarded from the standpoint that the general capitation fund shall take priority over the special service fund and shall be paid first to the practitioners. In occasions in which there is insufficient amount to pay for special services given, the value for each

service shall be reduced but the capitation prices shall remain fixed. On the other hand, in Schedule D of the regulations, the reverse is made possible so that the fund for special services shall take precedence and be paid in full, and if there be excess of such services, then the amount in the capitation fund shall be proportionately diminished and be paid last. The regulations provide for the appointment of practitioners on the panel to protect against the overcharge of any individual practitioner.

The other method allowed is payment by attendance. Here all services are paid according to rates fixed for special services, that is, visits to patient's residence, attendance on patient at the practitioner's residence or dispensary, special visit—that is, visit paid by the patient's desire on the same day as the call received after a certain designated hour in the morning or on Sunday; night visits—that is, calls between 8 p. m. and 9 a. m. in response to a call received during those hours; or treatment of abortion or miscarriage so far as not included in maternity benefit, setting a fracture, reduction of dislocation, administration of general anesthetic for the purpose of any operation included in any medical benefit treatment, or tuberculosis so far as the patient is not entitled to receive sanatorium benefit. There is also in the regulations a fee bill entitled "A Scale for Calculating Remuneration in Respect of the Treatment of Temporary Residents."

DRUGS AND APPLIANCES

The insurance committees have drawn up a list of drugs ordinarily supplied. Anything not included in the list must be subscribed on a special form. This list is a matter of agreement between the physicians, the pharmacists and the insurance committee of each area. Physicians cannot dispense medicines. Except in certain rural areas, by special permission of the insurance committee, they can supply drugs and will be given a capitation fee of $2.12 per person. If they care for tuberculosis in this area, their capitation fee becomes $2.25. There are also special regulations for certain sparsely populated areas in which there are special grants made for mileage.

The working of the insurance act of Great Britain has brought out many unexpected factors. First, that the amount of sickness among the people was vastly more than even the physicians working among the poor had any conception of. It was calculated that 60 per cent. of those on a physician's panel would come to him during the year for treatment. It was found with those caring for women that the sick rate among them was as high as 100 per cent. more than was calculated, and many were surprised to find how really ill and ailing many of these women had been, although dragging on with their work. In some panels in London the sickness was as high as 81 and 88 per cent. of the panels, and among the very poor in the city it was realized that they really had not been able to earn enough money to give them proper food by which they could be nourished to do their work; and there was a vicious circle of poverty, starvation and unemployment and sickness which began to be broken only when medical care attempted to increase the nourishment necessary to gain some measure of health.

In the drug tariff in which certain lists of appliances are given, consisting of bandages and surgical dressings of simple kind, ice bags, splints and catheters were the only other appliances furnished. Trusses and spectacles were not included, even in the first instances of injury. This is widely different from the German system, in which the spectacles and trusses are furnished in order that the workmen may go back to their work as soon as possible and keep off the sick lists. In England there has been rather a "penny wise pound foolish" policy pursued because many insured persons have been kept on the weekly sick benefit lists who would have gladly gone to work but have been unable to do so because unable to buy spectacles or trusses out of their own pocket, and the societies have been unwilling to furnish them, although the price for these appliances was no more than a single week's illness of an individual.

FACTS BROUGHT OUT BY FABIAN COMMITTEE

In general, according to the Fabian Committee report, the free choice of physician has not produced anything like an even distribution of the patients among the physicians. The Fabian Committee asserts that in town after town for which it has the figures, about one fifth of the physicians on the panel were caring for one half of the insured persons, while four fifths of the physicians divided among themselves in comparatively small numbers the other half. This gives the inevitable results of capitation and the same evil results as under the old lodge practice. The report goes on to say that there is one case of the physician who pays, it is true, four assistants whose names are on the panel, together with a secretary and a nurse, having on his list just under 9,000 insured patients in addition to an extensive private practice. There are many instances of physicians undertaking from 3,000 to 4,000 insured persons, sometimes without regular assistants. "We notice with some surprise that even with these crowded lists, and in addition to waiting for hours, only the smallest fraction of insured persons have for any reasons whatsoever taken the trouble to change doctors. Judging from the statistics we have seen, the changes do not average from 1 per cent. to hardly 2 per cent. per doctor. We consider that the medical attendance and treatment thus provided has various defects and shortcomings, in small matters and in great, not perhaps wholly or mainly the fault of the doctors themselves, which call for prompt amendment, and that it falls far short of the medical attendance guaranteed by the Act." The Fabian report also explains that the kind of service given was only for relatively slight ailments, and that the special treatments of eyes, ears, etc., and the really serious cases requiring hospital care, were not properly cared for.

The working of the act brought out the fact that England lacked adequate hospital accommodations. Previous to this the Fabian Committee asserts that not one county in England had a number of hospital beds equal to the low standard of two per thousand of the population. In France the law requires that there shall be one bed for every 500 or fraction of 500 inhabitants; in Germany the necessity is reckoned as at least five per thousand in towns and three per thousand in the country.

THE MATERNITY BENEFIT

The most serious breakdown in the English law has been in the administration of the maternity benefit. It was early found that it was a necessity that the money payment should be made to the woman herself and not to her husband except by her order. In calculating on the premiums and not including the actuarial calculation for the sickness benefits of the English insurance act, the statistics of the Manchester Unity Society were taken. This was a society composed entirely of men, and the actuaries loaded the benefits of these selected lives, allowing for various contingencies. The actuarial errors were that no account was taken of the varying difference in sickness of different trades and the big variation of sickness occurring between men and women and married and unmarried women. Calculating from the lives of selected men, the actuaries had forgotten all about pregnancy and sickness pertaining thereto.

The sum total of sickness calculated for occurred as figured. Many approved societies, finding that their reserves were disappearing and that they were liable to be bankrupt, decided that pregnancy or any sickness due to it was not a disease but a disturbance of the normal functions, and refused to pay for sickness due therefrom. This has caused a great deal of hardship and indignant criticism. In the report of the Departmental Committee on Sickness Benefit Claims, under the national insurance act, it was recommended that the financial burden of benefits necessary to provide the proper care for pregnant women should be removed from the funds of the approved societies and placed under the insurance committees, special funds being provided for this purpose. They made the further recommendation that the new benefit to be created should be paid to a pregnant woman in the last four weeks of pregnancy whether she was incapacitated or not, and that payment should be paid to the woman who was incapacitated from following her occupation the month previous to the last month, whether she was incapacitated by her pregnancy alone or by pregnancy accompanied by some other condition.

REFEREES

It has further been found that the panel physician cannot adequately cope with the decision when a patient shall go back to work. In disputed cases there must be referees, and the committee just referred to recommended that referees be appointed by the commissioners and not by the approved society or by the physicians. The referees should either be paid for full time or should be part-time referees, but should have the power of deciding when the patient shall be put off the rolls and be put back to work, and should be used also as consultants when a second opinion was needed by the panel physicians.

The experience of the English law shows also the necessity of the referee to prevent valetudinarianism and malingering. This is in accordance with the German experience already mentioned. As, for instance, insurance companies in London and Bristol appointed referees to whom both physicians and societies could send doubtful cases for a second opinion. In London 700 applications were made in two months' trial of the system. Of the 375 persons who were examined, 208 were declared capable of work, 167 remained on the funds of their societies, and 76 other persons failed to attend the examination, saying they were going to declare off.[9] In eleven months the Bristol referee had 600 cases sent him, 197 by local physicians, and 403 by approved societies. Of this number 240 were declared fit, 205 unfit, and 145 either did not attend the examination or returned to work.

Another valuable work of the referee would be to standardize the giving of certificates by physicians and the standardization of what constituted "incapable of work." At present there is no control of the physicians on the panel in this respect.

MATERNITY INSURANCE

Maternity insurance is of such importance that it seems wise that special attention should be paid to it and that it should not be passed over with a mere casual reference in considering the insurance laws in Europe. Dr. Lee K. Frankel[10] sums up as follows, what has been done in this subject both in Europe and in the United States.

"The industrial code of Germany forbids women's work during four weeks after confinement, and permits it during the next two weeks only on the certificate of a physician. In Austria the law requires a rest period of four weeks after childbirth, and in Switzerland there is a rest period of two weeks before and six weeks after childbirth. France has also enacted a compulsory rest period of eight weeks, which are to be equally distributed before and after childbirth. Seven weeks of rest are required in Italy. A rest of four weeks after childbirth is demanded by the Belgian and Portuguese laws, and the same period, which may be extended by one or two weeks through a medical certificate, is required under the law of Spain. Holland and Norway have both instituted a compulsory rest period of four weeks, and Sweden has a six weeks' rest period law. Great Britain prohibits the employment of women within four weeks after childbirth. It is of interest to note that in the maternity insurance legislation which has resulted from these attempts to protect motherhood, the unmarried mother, as a rule, is given the same consideration as her married sister."

In Germany the war at first cut down the sick benefits considerably and especially the maternity benefits, but in December, 1914, these confinement benefits were again voted in the war relief. Those uninsured wives of insured participants in the war are entitled to a single payment of 25 marks toward the cost of confinement, with 1 mark a day for a period of eight weeks, of which at least six must be after the actual confinement, and aid up to 10 marks for the ailments of pregnancy and nursing pay up to the conclusion of the twelfth week after confinement, to the amount of one-half mark a day. The maximum expenditure permissible in each case is 133 marks. All costs are borne by the empire. In the case of insured wives of insured participants, the confinement pay is furnished by the society and the remaining benefits are given by the empire. The insured wives of uninsured participants are entitled only to the benefits guaranteed by the society, and all costs must be borne by the societies.

"In the United States, legislation directly affecting motherhood is much less common than in Europe, owing in all probability to the more recent entrance of married women into factory life. Laws regulating rest periods before and after confinement have been enacted in Connecticut, Massachusetts, New York and Vermont. In Connecticut a compulsory rest period of four weeks before and four weeks after childbirth is provided. In Massachusetts there is a compulsory rest period of six weeks, two weeks of which are before childbirth. New York does not provide for a rest period before childbirth, but the employment of women is forbidden for four weeks after this time. The requirements of the Vermont statute are the same as those of Massachusetts.

"Indirect provision for the protection of motherhood is found in the statutes of various states. Conditions of labor of women are carefully regulated in a great many. Women are forbidden to engage in certain occupations. For example, in Alabama mine work is not allowed; in Arizona women are not allowed to work in saloons. Colorado, Illinois and Indiana have a provision similar to that of Alabama. Iowa and Louisiana forbid work in saloons. These laws, as well as many others for the protection of the woman wage earner, while not primarily designed to protect working mothers, have, it is safe to say, the indirect effect of protecting the children of the next generation.

"Another group of laws more general than these limiting occupation, but with probably the same indirect intent and effect, are those specifying the maximum working day. These laws are general in almost all states. California and Washington limit the working week of eight hours a day, while South Carolina has a maximum of twelve hours a day and sixty hours a week.

"It is interesting to note in these various laws that the lowest number of hours and the most stringent regulations of the conditions of work are found in the Far West. Specific regulations forbidding work during and after pregnancy, however, appear only in a few of the most densely settled manufacturing states in the East.

"Minimum wage legislation, although not specifically directed toward the protection of mothers, aims very definitely to provide women with a sufficient salary so that their health and morals may be preserved. It seems reasonable to suppose that one of the underlying purposes of this is to protect the future mothers. The following states have enacted such legislation: California, Colorado, Massachusetts, Minnesota, Nebraska, Oregon, Utah, Washington and Wisconsin."

Frankel further quotes Mayet of Berlin that it is self-evident that the physiologic needs of the mother and of the child are fundamental at the threshold of the infant's life, and that sickness and death are the punishment for the neglect of these laws. Maternity insurance is a necessity to assure the working classes of the physiologic needs of the pregnant woman and her infant. The Bohemian Sanitary Report is quoted to prove that the high rate of stillbirths in northern Bohemia is explained by the fact that women work up to the end of pregnancy in order not to forfeit their membership in the societies, and in France it has been found that the average duration of pregnancy is within the normal period of 269 days among women who observe a rest period before confinement but only 247 days among those who do not. It is also said that the large measure of the abdominal diseases of the women of the working class is attributable to the fact that they are unable to obtain that rest after confinement which Nature demands. The extent to which this is true cannot be deduced from statistics, but in the testimony before the Departmental Committee on Sickness and Benefit Claims, in England, it was brought out that the large increase of sickness among the married working women was due, in a great measure, to the lack of care in childbirth and to their returning to work too early. Moreover, the English insurance act has brought out these facts to a degree which has astonished the physicians.

In the care of children after confinement, the mortality among the bottle fed is notoriously greater than the breast fed, and the mortality is determined not only by the fact of breast feeding but also by its duration. Roese of Dresden found that the extent of dental decay and rickets varied

9. Halsey, Olga S.: Thesis on the British Health Insurance Act.
10. Frankel, L. K.: Maternity Insurance, New York Med. Jour., Dec. 18, 1915.

inversely with the duration of breast feeding. On the basis of statistics of military recruits it has been proved that the weight, chest and other measurements of adults varied greatly with the duration of the period which, as infants, they were fed at the breast. The same relationship is evident between breast feeding and efficiency in school. These facts have been found by Friedjung, Groth and Hahn.

The following benefits and protection are deemed by Mayet a necessity in any scheme of maternity insurance: a rest period before childbirth, with full compensation for wages lost; aseptic conditions of birth, and obstetric aid by a midwife and, if necessary, by a physician; a rest period after childbirth, with full compensation for wages lost; in case of necessity maternity care, either at home or in an institution; extension of the period of breast feeding by means of nursing benefit, and, if necessary, a pecuniary aid toward the nourishment of the infant.

"In Australia an entirely different philosophy underlies the maternity allowance provision, which also dates from 1912. In all other countries there are salary limits to the employment benefits; contributions are made by the workers, or by the employers and employees, and, in some cases, there are state subsidies. In Australia, however, a gift of 5 pounds is made by the Commonwealth to each mother on the birth of a child. This covers all classes in the community, and cannot properly be classed as insurance."

HEALTH INSURANCE IN THE UNITED STATES

The general situation in the United States today is similar to that in England and Germany before the passage of their comprehensive health insurance laws. No state, municipal or other government in any way provides for or aids health insurance, according to the latest bulletin on health insurance of the Treasury Department. Medical benefit, however, is generally granted by both state and municipal authorities in the public hospitals which are supported so generally throughout the Union, for hospitals are nothing more or less than that amount of medical benefit which the community is willing to give for its own or neighboring sick poor. And the same can be said of the free dispensaries. Both state and municipalities go further and provide sanitation and preventive medicine through the various departments of health. As a rule, this extends only to the communicable diseases under the sanction of the police power of the state. In some instances, as in the New York City health department, therapeutic procedures are also added to the benefits given often in the homes, as, for instance, free diphtheria antitoxin and free meningitis serum given by trained inspectors on the advice of any physician to the poor at any time. The New York health department goes farther and manufactures these substances, its laboratories adding also in no small degree to the scientific advancement of medicine in subjects relating to communicable diseases. New York City also supervises the health of the children in the public schools both by physicians and by nurses. Its services are mostly toward the prevention of disease, but in the special group of communicable diseases an enormous mass of work is done in their care and treatment. This care has developed from the necessity of absolute control if real prevention and limitation are to be obtained. Public care of the insane is in reality the permanent care of mental invalidity, and the public epileptic colonies are founded on a similar basis.

Other evidences of health insurance are shown in the benefits given by the trade unions, both national and local, by employers' organizations for benefit of employees, such as the railroad funds and the establishment funds, mutual societies—that is, the fraternal orders, local lodges, general benefit societies and special sick benefit funds—and commercial companies operating for profit or on a mutual principle, that is, industrial insurance companies and casualty companies doing industrial insurance. The trade unions probably take in about 10 per cent. of the total number of the wage earners. They are the only organizations which so far have successfully dealt with unemployment insurance. They are especially fitted for the carrying out of sickness insurance through their local lodges because members of the local lodge have a mutual supervision and restraint on each other. All are practically subject to the same environment, and all possess approximately equal chances for health or sickness.

BENEFITS BY TRADE UNIONS

In some of the large national trade unions the national body pays the disability and death benefits while the local bodies control the sick benefits. Many of these unions do not pay for sickness for less than a week, and a week's waiting period is required. Others begin payment after fourteen days, but pay then from the first day of illness. Death benefit of various amounts is the most universal benefit paid. Temporary disability, which is really sickness insurance, is not as commonly paid as permanent disability, and this last serious condition is paid by lump sum of the same amount as the death benefit; sometimes the payment of this permanent disability benefit disentitles the member to any other form of benefit, and unions paying the permanent disability benefits usually require a longer term of paid premiums for members who become entitled to this benefit than is required for members who become entitled to death benefits, the usual requirement being from one to two years. In the report of the commissioner of labor,[11] it is stated that the generally accepted definition of permanent disability is the loss of a hand at or above the wrist joint, the loss of a foot at or above the ankle joint, the loss of one eye or both eyes, or a permanent disability caused by paralysis. A few unions pay superannuation benefits as a lump sum per month through life; there is one union that pays $10 per month for six months in the year. The cigar makers' union disguises this old age pension under the form of "out of work benefits," and a large number of recipients of this relief (according to Henderson in "Industrial Insurance") are infirm persons who cannot earn the average wages, and many of these are advanced in years. This keeps them from going into the market on very much reduced wages, which they must take if unable to subsist.

Table 6 shows the kind of benefits paid in the 530 funds of the trade unions reported on nine years ago (1907) in the Twenty-Third Annual Report of the Commissioner of Labor. It is given here as showing the type of relief which the trade unions give to their members.

TABLE 6.—BENEFITS PAID BY TRADE UNIONS

Kind of Benefit Paid	Number of Funds	Number of Members	Number of Persons to Whom or on Account of Whom Benefits Were Paid
Temporary disability	346	102,800	9,117
Death of member.....	401	133,821	1,472
Death of member's wife..	86	26,790	111
Death of other dependents	40	10,190	179
Unemployment	10	3,398	424
Permanent disability in lump sum	3	1,730	.....
Permanent disability in form of pension.....	7	10,374	106

Of the 530 funds investigated, 346 paid benefits on account of temporary disability of members, and of the 102,800 in the 345 funds which reported the number of benefits paid, 9,117, or nearly 9 per cent., received benefits for temporary disability during the year previous. It is further shown by this table that the death rate among these unions was about eleven per thousand members, for the death benefit funds have in the 395 trades reporting concerning this item 133,821 members and had paid 1,472 death benefits. It is further interesting to note that in the ten funds paying benefits to members when out of work, nine reported statistics on this point that out of a membership of 3,898, unemployment benefits were paid to 424 members, or about 12 per cent., during the year. It so happened that in the three funds paying permanent disability in a lump sum no member was entitled

11. Twenty-Third Annual Report of the Commissioner of Labor, 1908.

to this benefit. The seven funds that gave pensions for permanent disability gave these pensions to about 1 per cent. of their members during the year previous. Of course, if figures on similar points could be obtained today, there would be a great variance with these figures of ten years ago, especially in the number of members in the trade unions. Whether or not the ratio of temporary disability and permanent disability would be the same, it is impossible to say.

In considering the amount of temporary disability benefits, the recent passage of the workmen's compensation laws has modified greatly statistics obtainable on this point. It is interesting, however, to note that of the 530 funds included in the report, 346 paid benefits on account of temporary disability. Four of those paid for disability resulting from sickness only, thirty-eight for accident only, and 304 for disability resulting from either sickness or accident. The amount paid usually ranged from $2 to $5 a week. The time for which these benefits were paid varied greatly in the funds, some funds having first, second and third periods for which they paid the disability. The majority of the funds limited the periods to a stated number of weeks in each year or days in each month, while others limited them to disability. In twenty-three funds the period for which payments are continued is unlimited. Sixty-one of the 346 paying temporary disability limit the payments to thirteen weeks in each year; fifty-three limit them to a period not exceeding ten weeks in each year. In some instances the duration of the period is determined by the age of the beneficiary when he joined the organization; in others the payments are continued to the end of the working season without regard to the time of the beginning of the disability. There is further variation in the length of membership required before a member is entitled to temporary disability benefit. In 157 of the 346 funds, members do not become beneficiary until six months from date of admission; in seventy-one, however, they are entitled to benefits at once. In sixty a three months' membership is required; twenty-four funds require one year membership.

To prevent malingering and valetudinarianism or fraud of any kind, some sort of supervision is exercised over members who claim benefits on account of temporary disability. Of the 346 funds investigated, 279 require that patients be visited by sick committees; 257 require physicians' certificates; in twenty-seven, physicians' certificates may be required if deemed necessary; eight require visits by some officer of the society. Many of the funds have more than one form of supervision, that is, more than 200 of the 257 funds which require physicians' certificates also require visits by sick committees.

Many of the trade unions place certain restrictions on the action of members during the time they are drawing pensions for temporary disability. In twenty-seven funds they are forbidden to use intoxicating liquors to excess, in one to frequent drinking places after 9 o'clock at night, and in twelve to frequent such places at all. In fifteen they are forbidden to leave home at night, and in eighteen to leave home at any time. There are various other restrictions, the violation of which usually causes a discontinuance of the benefits. These funds vary greatly as to a continuance of benefits after the limit allowed is reached. In 214 of them, members who draw benefits for the entire period are entitled to no more benefits for the same year; but in twenty-three of these there is provision for extending the time by vote of the members, and the twenty-three funds there is no limit to the time for which benefits may be paid. In fourteen funds, after benefits are paid for the maximum period, no more are paid for the same disability.

The amount of death benefit paid by the trade unions varies greatly. In twenty-four funds there are more than one class of members, and each class is entitled to a different amount of death benefit. In 322 of the funds mentioned here which have but one class of death benefit and pay a stated amount, benefits range from $375 to $20; about one third of the number pay $100; in eighty-two funds the benefit paid is $50; in fifty funds the benefit paid is $75. An amount based on membership is paid by fifty-one funds. Ten of these funds pay an amount equal to 50 cents per member, and thirty-one pay $1 per member. Ten funds have provisions for paying benefits to members who are permanently disabled by chronic illness or by the loss of some part of the body. How much the latter clause may be affected by the workmen's compensation law it is impossible to say. In four of these ten the benefit payments were made in lump sum, the amount in one being $40 and in another $100. In the third an amount is paid equal to 50 cents per member for certain disability by accident, such as one hand and one foot, or $100 per member for the loss of both hands, eyes or feet. In the fourth, the amount of benefit depends on the length of membership of the beneficiary, ranging from $50 for six months' membership up to $100 for five years' membership. In six funds the benefit payment is in instalments, the period for which payments are continued being unlimited in each case. The amount paid is $4 per week in one fund, $3 in another, and $1 in another, $10 per month in two, and $1 per month in the other. These statistics are sufficient to give an idea of the kind and amount of benefits paid by these funds.

Besides the benefits on the death of members, eighty-six of the funds have provisions for paying benefits on account of the death of a wife of a member, and one fund for female members pays benefit on the death of the husband of a member, the amounts paid varying from $12.50 to $112.50. The most common benefit is $50. Forty of these 530 funds have further provision to pay benefits to members on account of death of dependents other than wives, these dependents being children, parents, brothers, sisters, fathers-in-law, mothers-in-law and other relatives. Few funds include all of these, and about one half of the funds pay only for children, the amounts of the benefits varying from $10 to $100. Most of the funds pay more than one amount of benefit, the amounts varying according to the age or relationship of the dependent. To give some idea of the amount paid during the year 1907 by the 530 funds investigated, Table 7 is self-explanatory.

TABLE 7.—AMOUNTS PAID BY FUNDS

Kind of Benefit	Number of Funds		Amount Paid During Year
	Having Provision for Paying Benefits	Paying Benefits During Year	
Temporary disability	346	334	$198,189.50
Permanent disability	10	4	20,964.00
Death of member.....	401	311	181,643.81
Unemployment	10	8	29,417.60
Death of member's wife..	86	47	6,470.50
Death of other dependents	40	32	3,859.00
Expenditure for hospitals.	7	7	16,261.50
Total			$457,493.81

EMPLOYERS' ORGANIZATIONS

In the class of associations which the employers have organized for the benefit of employees are the railroad relief funds and the establishment funds. Of the first, in 1907, the United States Bureau of Labor could only find fifty relief funds connected with thirty-seven railroad systems. Thirty-six of these funds are insurance funds to which the employees contribute all or part of the revenues; fourteen are pension systems maintained entirely by the companies. Of the 500,000 eligible employes, 300,000 were members of these funds. Thirty-one funds pay benefit for temporary or permanent disability; thirty-four for death, and one for superannuation. For thirty-six of these insurance funds there is a managing board, some members of which are chosen by the employees. In the majority of circumstances these boards pass on the claims to benefits. Twenty-two of the funds are managed by the employees alone, and fourteen jointly by employees and company. In each of these fourteen, some officer of the company is the supervising officer of the fund, the company often taking charge of the funds and guaranteeing the benefit payments. The companies generally make substantial contributions.

In thirty-three of these insurance funds the membership is optional. The maximum age for admission to membership is generally the same as the company's service age limit; in

eighteen funds it is 45 years; in four, 50; in one, 55, and in three, 60 years. Eighteen of the funds require a medical examination for applicants, and nine others require that the applicant be in good health. Three funds exclude colored employees. In ten funds, persons leaving the service forfeit membership. All other funds permit members leaving the service to retain membership or natural right death benefit, that is, death from natural causes. Eight funds managed jointly contain provisions in their constitutions releasing the funds from all claims for benefits whenever a suit for damages is brought against the employing company. In these eight funds the companies make contributions as follows: one company duplicates the employees' contributions; one contributes 20 per cent. as much as the employees; three, 15 per cent.; one, 10 per cent.; one, 2 per cent.; and one, less than 1 per cent. Dues and assessments are usually paid in advance and deducted from the pay of the employees. Thirty-one funds pay benefit for temporary disability. The periods during which benefit payments may continue range from six to fifty-two weeks in one year. The payments range from $2.50 to $20 per week. Usually after the first fifty-two weeks, the payments are half the original rates. This unlimited period makes these payments in reality a permanent disability benefit. Beneficiaries are visited usually each week by the sick committee and must furnish a doctor's certificate as often as required. Benefits are forfeited when a disability is caused or prolonged by carelessness, intemperance, immorality or unlawful conduct.

Of the thirty-four funds paying death benefits, seventeen pay sums from $50 to $400; the other seventeen pay regular benefits of a maximum from $1,000 to $3,000, and of these seven (in all of which the company has a controlling interest) have optional additional death benefits for which additional dues are paid. The highest total insurance which may be taken out in any fund is $6,000.

Besides the continuation of temporary disability or permanent disability, five funds pay lump sum benefits for various permanent disabilities ranging from $100 to $6,400, and one pays a monthly benefit of $5. To the fourteen railroad pension systems the employees do not contribute; they are all controlled and maintained by the companies. These pensions are usually based on age and length of service, monthly payments for life usually being made on 1 per cent. of the average monthly wage for the ten years next preceding retirement for each year of service. In most of the systems, pensions for superannuation are granted to employees retired at 65 or 70 years of age for from ten to thirty years of service and after incapacity of employees of from 60 to 69 years of age of like service. The age limit for entering the service of these companies is usually 45 years. The pensioners are allowed to engage in gainful occupatious, but may not reenter the company's service.

ESTABLISHMENT AND NEEDS

The greatest growth probably in recent years has been in the formation of establishment funds or special insurance funds in which the employees of a single commercial manufacturing establishment or business form a more or less complete social insurance scheme for their protection. Some of these are contributed to only by the employees; some are joint contributions of employer and employee; some funds are run entirely for the employees by the employer. The membership in some is voluntary; in others, compulsory. The method of contribution varies, and the method of management varies. It is impossible to go into the enormous details necessary to describe the many kinds of funds and benefits given under the separate establishments in this country. The benefits vary all the way from sick benefits and death benefits up to the complete systems of accident and sickness insurance, maternity benefits and hospital benefits, permanent disability and old age pensions; some establishments having practically the most modern, complete social insurance systems with compulsory insurance, or all members of the establishment forced to go in and protect themselves. These are in some cases connected with welfare work among the families of the employees, and with district nursing.

There has been a growing realization in this country that a cheerful willingness to work goes with a healthy mind in a healthy body. Public hygiene in communities and the full benefit of the protection that social insurance gives has been sought and used as a wise business policy. A state wide health insurance would, in many instances, only carry out what has already been accomplished in many of these establishment funds.

FRATERNAL SOCIETIES

There are other industrial benefit societies which differ from labor unions and establishment funds in that the membership, although composed generally of wage earners or of those on small salary, is not as a rule dependent on membership in any particular union or employment in any particular establishment. The management of these societies and the administration of their affairs is entirely in the hands of the members. It is also true that the membership of some of these societies is limited to the employees of a certain industry; the membership of others is limited to employees of certain industries of a certain locality. Other such funds limit their membership to the employees of any industry of a certain locality while others extend their membership to the employees of any industry without reference to locality. Some of these societies have restricted their membership to males while others admit both males and females. In others, the membership is composed exclusively of women. Some of these societies provide cash benefits in case of sickness, injury and death; some for sickness and injury only, and some pay only death benefits.

TABLE 8.—UNITED STATES FRATERNAL ORDERS*

Year	Number of Orders	Assessments (Millions)	Total Income (Millions)	Claims Paid (Millions)	Total Disbursements (Millions)	Assets End of Year (Millions)	New Business (Millions)	Number of Certificates in Force, End of Year (Millions)	Amount in Force, End of Year (Millions)
1914	498	$125	$144	$ 98	$121	$189	$1,079	7	$9,171
1913	509	129	144	101	121	183	1,065	8	9,622
1912	397	123	132	95	114	163	1,023	9	9,472
1911	396	117	130	84	113	148	1,200	10	9,839
1910	497	114	128	92	110	129	1,331	8	9,562
1909	645	82	120	89	104	117	1,203	7	8,920

* American Year Book for 1915, p. 377.

In 1914, in 122 mutual sick benefit associations operating in the United States, the number of certificates in force at the end of the year was 1,072,764. Their total income was $7,246,000, and their premiums $646,588; their total expenditures were $6,169,000; they had paid to agents and for medical examination $1,587,000; and the expenses of management were $1,608,000. Table 8 best expresses the number of fraternal orders in the United States and the amount of business done by them.

It is interesting to note that during the past year two of the oldest fraternal societies realized that they had become insolvent and were liquidated. These societies had been in existence for over forty years, and had been managed with integrity and economy; but the inadequate rates and the gradually increasing cost, with the increase in age of the members and the steady withdrawal of sound risks, caused their insolvency. The assets amounted to a little over one half of the accumulated death claims in one case and something more than half in the other. In the case of both these societies, however, those living received nothing in the liquidation except the

privilege of still having the insurance by being taken into another order by arrangement made in the liquidation. These two societies are fair examples of instances in which, with inadequate rates, an attempt is made in voluntary insurance to keep up the increasing strain of advancing age and the increasing death rate. Many of these fraternal orders, outside of their social or religious ceremonies, give life insurance; many of them in their lodges give medical benefits and cash benefits during sickness or injury. They have generally among their membership the better paid classes of workmen and the more thrifty of employees on small salaries.

Important and large as their insurance business is, it does not reach the really poor whose need is greatest, both for the protection against sickness and for death when it occurs. Although many local lodges of the fraternal societies give, as it has just been said, sick benefits and medical benefits, they do not compose the majority of the so-called lodge practice. When one speaks of lodge practice, what is usually referred to are usually small localized mutual benefit societies. These are often formed of various races in which the binding element is origin from a single region abroad or the bond of one language at a time when its members are too recently arrived in this country to speak or understand English, or where, in the large cities, many foreigners are massed together living on low wages, and find that some form of mutual insurance against the calamity of individual sickness must be obtained to protect them from the necessity of using the dispensaries for their minor ailments and going to the public hospitals when seriously ill. Their object in the latter regard is not always obtained, but it is an expression of the economic necessity which these people seek in the insurance idea for their protection.

These lodges are almost invariably run on the system of capitation payment to the physicians, that is, so much per head per year. There is competition among poor physicians, themselves struggling to obtain several lodges that they may eke out a meager income, and the commercial haggling by the officers of these lodges bidding down the struggling doctors to a minimum so that all the evils of the system are brought out in full force. Underpaid physicians, enormously overweighted by large panels of people to take care of, result in inadequate remuneration to the physicians and inadequate care to the sick. The physician loses his self-respect from knowledge of the kind of service he is giving: he is held in contempt by his patients. The whole service and the capitation system under which it is possible is held as the criterion of what is dishonorable and contemptible in the practice of medicine. The results to the unfortunate physician who must give this service are disproportionately severe for his responsibility in the matter. The vicious circle is formed by certain economic situations, and this circle cannot be broken except by a change of the economic forces. Compulsory insurance by the state can alone solve these economic problems of the very poor and release the unfortunate physician who, facing starvation, must accept this lodge practice.

COMMERCIAL INSURANCE COMPANIES

There remain to be considered the commercial insurance companies giving so-called industrial insurance or giving health insurance. The so-called industrial insurance is practically funeral insurance or death benefits among the poor. This amounts to enormous sums in the United States. In 1881 the average per policy was $91; in 1911 this had risen to $138. This does not mean any increase in the protection that a person in his last illness may obtain, but it means the increased amount of extravagance with which the standards of burial have risen among the poor. The self-respect among the poor demands that their dead shall be decently buried at their expense, and a pauper burial is considered with horror among them.

The proportion of the population carrying industrial insurance in the United States is nearly 27 per cent. Thirty-two companies in 1911 were doing this business. There was about $785,900,000 worth of insurance written during the year. There were about 24,700,000 policies in force; the amount of insurance in force was about $3,423,000,000; the premiums received amounted to about $183,500,000, and the losses paid amounted to about $50,231,000. As Dr. Rubinow expresses it, "It is too well known that the greatest portion of money paid out in industrial insurance claims readily finds its way into the pockets of undertakers as a result of deplorable extravagance in funeral arrangements, encouraged by a lifelong insurance for the purpose of a decent funeral." In New York State alone, in 1914, $29,223,000 was given in premiums for this burial insurance to the four companies doing this business. The recent Mills bill for health insurance in New York State, if it had passed, it is calculated would have cost $30,000,000. That is, this law offered to the people of New York State, having an income of $1,200 a year or less, sickness insurance, funeral benefits and maternity benefits for only $1,000,000 more than they now squander in funerals alone. The $183,000,000 paid in 1911 in this country for funeral insurance almost equals the total cost of the German social insurance system. Thus the American working class pays for funeral insurance as much as is contributed in Germany by all three parties concerned—the wage-earners, the employers and the state—for accident insurance, sickness insurance, maternity insurance, invalidity insurance and old age insurance combined.[12]

The insurance companies which give the industrial insurance, or burial benefit, attempted in their earlier history to provide sick insurance; but the amount paid for burial insurance alone absorbs practically the greater part, if not all, of the available resources for insurance purposes in the families of small income. There was, however, an attempt made by these companies to provide sickness insurance, but the effort generally failed and had to be abandoned. Henderson[13] quotes President Dryden of the Prudential Insurance Company of New Jersey as saying that a company which has its business scattered over a wide territory, and must act through salaried agents, cannot undertake sickness insurance, and that this form of insurance is possible only in brotherhoods or small groups in which the members know each other and can detect and discipline malingerers. There is no question that these industrial insurance companies are at an enormous disadvantage in their endeavor to furnish any adequate sickness insurance that is at all available to the poor.

At a hearing before the Committee on Labor of the Sixty-Fourth Congress, held April 6, 1916, the testimony of the Hon. Charles F. Nesbit, superintendent of insurance of the District of Columbia, brings out this point in a very striking manner. This testimony says that there are about 90,000 wage-earning negroes in Washington. They form most of the casual labor, not skilled labor, but servants and day laborers and drivers, and such workers as those. Among these people there has grown up a system of insurance against sickness largely confined to the District of Columbia, Maryland, Virginia and the Carolinas, and somewhat in Tennessee. The greatest problem with these people is that when they become sick their pay stops. This insurance is not confined to the negroes, but is used by the poor white people of the District of Columbia as well. Mr. Nesbit further says that there is a very strenuous effort on the part of these poorly paid people to provide against sickness, but this commercial insurance is a very inadequate way of providing it, since they pay $500,000 a year in premiums and out of that all they get back is $200,000. The companies pay practically sixteen claims out of every seventeen claims made to them, practically 94 per cent. of all claims put in, and yet the result is that every time $100,000 is collected from the poorest citizens of the foregoing territory, it costs $60,000 to collect it and $40,000 is all that is paid back. The expenses, of course, of collecting this amount are extremely high because the premiums are collected in small amounts, of 10, 15 and 25 cents a week, and agents must collect it by going from house to house. This 60 cents out of every dollar is made up of the administration expenses of overhead charges, of fees to the agents and of profits.

This shows the difficulties of the situation of the insurance companies endeavoring to give sickness insurance. Because of inadequacy of control by the companies of their insured people scattered over wide areas, because of the necessities of the manner in which they must carry on their business, it is an impossibility, with the best of intentions, to give an

12. Rubinow: Social Insurance, p. 420.
13. Henderson: Industrial Insurance in the United States, p. 162.

adequate health insurance to the really poor who are in the greatest need of this protection.

REPORT OF THE COMMISSION ON INDUSTRIAL RELATIONS

These statistics show in general the mass of systematic and yet incoordinated attempts that have been gradually developing to bring about health insurance in the United States. In the final report of the Commission on Industrial Relations, which was formed by act of Congress in 1912, we find the following conclusions based on the findings of Dr. B. S. Warren of the Public Health Service:

"Each of the thirty-odd million wage earners in the United States loses an average of nine days a year through sickness. At an average of $2 per day, the wage loss from this source is over $500,000,000. At the average cost of medical attendance ($6 per head per year) there is added to this at the very least $180,000,000.

"Accidents cause one seventh as much destitution as does sickness and one fifteenth as much as does unemployment. A great deal of unemployment is directly due to sickness, and sickness in turn follows unemployment. Sickness among wage earners is primarily the direct result of poverty which manifests itself in insufficient diet, bad housing, inadequate clothing, and generally unfavorable surroundings in the home. The surroundings at the place of work and the personal habits of the worker are important but secondary factors."

This emphasizes the well known vicious circle of sickness, unemployment and poverty.

The commissions recent study in Indiana showed that 17.9 per cent. of the unemployment among women in stores in that state was due to illness. In 1901, a federal investigation of 25,440 families showed that 11.2 per cent. of heads of families were idle during the year because of sickness, and the average period of unemployment was 7.71 weeks. Other investigations show that from 30 to 40 per cent. of cases requiring charitable relief are immediately due to sickness.

The responsibility for the disease-causing conditions rests on the employer, the public and the employee. The employer's responsibility includes, besides conditions causing so-called occupational diseases, low wages, excessive hours, methods causing nervous strain, and general insanitary conditions. The public has in part recognized its responsibility in such matters as housing, water supply, foods, drugs and sanitation. The greatest share of the responsibility rests on the individual, and under present conditions he is unable to meet it. This inability exists on the fact that the majority of wage earners do not receive sufficient wages to provide for proper living conditions, and because the present methods of disease prevention and cure are expensive, and sickness is most prevalent among those who are least able to purchase health. The worker is expected to provide for almost certain contingencies in the future, when he lacks means of existing adequately in the present. If a rapid increase of wages were made to all classes of workers to a standard which would permit proper living conditions and adequate medical attention, it is believed it would solve the problem; but there is no indication that this will occur. The remedial measures for existing conditions must, therefore, be based on the cooperative action of those responsible for conditions; must be democratic in maintenance, control and administration; must distribute costs practicably and justly, and must provide a powerful incentive for sickness insurance.

A system of sickness insurance is the most feasible single measure. This conclusion is based on the following:

"The losses occasioned by the wage earner's sickness affect employee, employer and community, all of whom share in the responsibility. Insurance is the recognized method of distributing loss so as to reduce individual risk to a minimum.

"The strongest incentive—that of lessening cost—is given to efforts to diminish frequency and seriousness of losses; sickness insurance in this respect is a preventive measure of a positive and direct kind. The lower the morbidity and mortality rates, the less the amount necessary for benefits and the lower the insurance rate.

"Sickness insurance is no longer experimental in the United States, there being several million workers so insured. The cost would be no greater than at present. The conclusion appears sound that medical benefits of $7 per week for a period not exceeding twenty-six weeks in one year, and death benefits of $200, can be provided at a total cost of 50 cents per week per insured person. Budgetary studies of large numbers of workingmen's families show that under present conditions from 25 to 50 cents a week, up to 70 cents and even $1.86, is spent for little more than burial insurance. Workers would thus receive immeasurably greater benefits for much less than they now pay."

It is suggested that the commission recommend a federal system of sickness insurance constructed along the lines here briefly summarized:[14]

1. Membership.—The membership shall comprise all employees of persons, firms, companies and corporations engaged in interstate commerce, or whose products are transported in interstate commerce, or which may do business in two or more states. The employees of interstate establishments to be permitted to be insured if they so elect, under regulations to be prescribed by the commission.

2. Fund.—The fund is to be created by joint contributions by employees, employers and the government, the last named sufficient for expenses of administration. Such contributions should probably be in the proportion of 50 per cent. from workers, 40 per cent. from employers and 10 per cent. from the government. Individuals or groups desiring larger benefits may arrange to make larger payments, and the rate in any trade, industry or locality may be reduced where conditions so improve as to make a lower rate adequate. The contributions are to be secured through taxing each interstate employer a certain amount weekly for each employee, the part contributed by workers to be deducted from their wages, thus using the regular revenue machinery of the government.

3. Benefits.—Benefits to be available for a limited period in the form of cash and medical benefits during sickness, nonindustrial accidents and childbearing; death benefits to be of limited size and payable on presentation of proper evidence.

4. Administration.—The administration of the insurance funds is to be carried out by a national sickness insurance commission. The national commissionn should be composed by presidential appointment with senate confirmation, of a director (who would be chairman), representatives of employers and representatives of employees in equal ratio, and, as ex officio nonvoting members, the federal commissioner of labor statistics and the Surgeon-General of the Public Health Service. The commission should be empowered to supervise all funds and determine their character and limits of jurisdiction; promulgate all regulations necessary to enforce the act; establish and maintain hospitals; maintain staffs of medical examiners, specialists, dentists and visiting nurses; provide for medicines and appliances; make contracts with local physicians; cooperate with local funds and health authorities in disease prevention, and provide for collecting actuarial data.

Correlation of the insurance system with the medical profession, the lack of which has been a serious defect in German and British systems, is absolutely necessary. Contracts with physicians should allow to each a per capita payment for the insured persons under his care, the right of selection of physician to be retained by the insured. For the signing of certificates entitling the insured to benefits, and for treating the insured in hospitals, the surgeon-general should detail physicians from the Public Health Service, their entire time to be given to these and other duties (consulting with local physicians, enforcing federal laws and regulations, and cooperating with local authorities).

ADVANTAGES OF A GOVERNMENTAL SYSTEM

Warren and Sydenstricker,[15] in their report on "Health Insurance: Its Relation to the Public Health," further point out that the democratic character of an effective health insurance system is most pronounced in a governmental system. The wage earner has a more real basis for feeling that the benefits he receives are rights to which he, as a citizen, is entitled. A governmental system removes all trace of the taint of charity which so often accompanies employers' welfare work and which might accompany a private plan supported in part by employers. Certain features necessary to the success of health insurance which are obnoxious

14. Final Report, Commission on Industrial Relations, 1915.
15. Warren, B. S., and Sydenstricker, Edgar: Health Insurance: Its Relation to the Public Health, Bull. 76, Treasury Department, U. S. P. H. S., pp. 63-64.

to private health insurance plans—for example, compulsory membership—are largely removed when health insurance is a public institution and a governmental affair. Furthermore, experience has shown that there is a much higher degree of efficiency in management, and at much less cost, in government than in private health insurance plans. The necessity for maintaining large reserves, providing profits, paying high salaried officers, soliciting agents, commissions, and general duplication of overhead expense is done away with in a governmental system. The cost of administration is further reduced since already existing machinery for collection of the funds can be employed through the taxing power of the government, and a less complicated and elaborate organization of administration is necessary.

It is further pointed out that it is a significant fact that the experience of European nations with health insurance has shown governmental systems to be the only systems which accomplish the purposes desired. In European countries in which private health insurance plans existed, or in which there were private systems subsidized by governments, the experience has been that discouragingly small enrolments in membership resulted and that the workers who were on the border line of poverty and in the greatest need of insurance were the very ones who did not insure. Great Britain, when it adopted a system of health insurance in 1911, did not subsidize private plans, as some of the European nations had done, but advanced at one step to a highly developed form of a governmental system. Several other nations which subsidized private insurance plans have rejected that method and adopted a governmental system. Governmental health insurance systems have unquestionably come to be recognized as the most satisfactory method of dealing with the problem of sickness among wage earners.

SICKNESS SURVEY OF ROCHESTER, N. Y.

In studying any system of health insurance in this country, the lack of morbidity statistics has been a great drawback in calculations of the ratio of expense and the probable occurrence of disease. No country, however, has had morbidity statistics until compulsory health insurance was put in force. There have been two studies in New York State recently which show, in certain localities, the occurrence of sickness and, in one instance, the possibilities of existing institutions to provide adequate care for the sick both in their homes and in hospitals. The Metropolitan Life Insurance Company made one of these investigations[16] in the city of Rochester during the week of Sept. 13, 1915; 7,638 families were reached, including 34,490 persons. This was 14 per cent. of the total population of Rochester and was considered a sufficiently large sample to give a fair degree of accuracy in judging the measure of the amount of sickness in the industrial community as a whole. It is stated that an analysis of such items as occupation and the general characteristics of the families as to size confirm this conclusion.

Of the 789 cases of sickness found, 82.8 per cent. were unable to work; 8.8 per cent. were able to work though sick, and the ability to work was not specified in 8.4 per cent. It is further interesting to note that there were 356 men sick and 442 women. Of the men, 83.4 per cent. were sick and unable to work and, of the women, 82.4 per cent. Of these, 24.7 per cent. of the men were sick in bed and 29.9 per cent. of the women, and of these, 13.2 per cent. of the men and 19.9 per cent. of the women were at home. There were up and about, though sick, 58.7 per cent. of the men and 52.5 per cent. of the women; sick but able to work, 9 per cent. of the men and 8.6 per cent. of the women. Taking adults of 15 years and older, it was further found that the rate of sickness and inability was 27.3 per thousand for males and 31.2 for females, including all sicknesses. For sickness involving incapacity for work, the rates for ages of 15 and over were 23.2 per thousand for males and 25.7 per thousand for females. Broadly speaking, over 2.5 per cent. of the working population canvassed were sick and unable to work at the time of the survey. The rates of sickness among females incurring disability were distinctly higher than for males up to the age of 54; from 55 onward the rate of sickness in males exceeds that of females. This is especially marked at the age period between 25 to 34, when twenty-five cases of childbirth and its complications increased the rate. This rate, even with an allowance for puerperal conditions, is in excess of that for males at the same age period.

The chief causes of disability were seventy-three cases of rheumatism, and tuberculosis, cerebral hemorrhage and insanity, in the order named. The transmissible diseases, such as typhoid and acute infectious diseases of children, were relatively few, there being but four cases of the former and sixteen of the latter.

Of the 661 persons unable to work, eight were incapacitated for one day; forty-one, or 6 per cent., for less than one week, and 149, or 22.5 per cent., for less than one month. On the other hand, persons able to work show a smaller proportion of cases under one month in duration. Rheumatism, neuralgia, neuritis, neurasthenia and headache, which constitute the bulk of the cases sick and unable to work, were in most instances longer than one month in duration and influence the figures of the entire group, a large percentage of the cases being of longer duration, 128, or 19.4 per cent., lasting between one and three years.

Without distinction of the extent of disability, in 61 per cent. of the cases of sickness the patients had a physician in attendance; 50 per cent. of the total sick outside of institutions were in the care of physicians, but only 45.3 per cent. of those sick but able to work were thus cared for; 63.8 per cent. of the sick persons incapacitated for work employed physicians or were being treated in institutions. There was but slight variation for sex in these figures.

The sickness rates of this survey are minimal. The survey was made in a month which, for Rochester, has less mortality than the average month for the year. The figures, therefore, are conservative, and on the basis of the foregoing sickness rate, it may be concluded that throughout the year there are at least 2,147 males constantly sick and 2,400 females. In adults of 15 years of age and over, the male population of Rochester is calculated at 92,552, and of women, 93,392.

Small as these statistics are, they present practically the same percentage of sickness in relation to sex and age as do the statistics of the Leipzig Society and the Sickness Insurance Funds of Austria.

SICKNESS SURVEY OF DUTCHESS COUNTY, N. Y.

Of special interest in connection with health insurance is a study of sickness in Dutchess County, in New York, made by the State Charities Aid Association. This study was an attempt to secure reliable data in regard to sickness which had occurred in certain selected communities in Dutchess County during a sixteen month period in 1912 and the first four months of 1913. It was made at the request of the trustees of the Thomas Thompson Trust. The report says:

"It was important to have more exact knowledge of the sickness which had occurred in the county, in order to draw trustworthy conclusions as to how adequately or inadequately the existing public and private facilities were meeting the needs of the community. With the exception of certain contagious diseases, reported incompletely, at best, to the health officers, there are no public records of sickness in Dutchess County—a condition true of the rest of the country as well. The method usually employed of estimating the amount of sickness is to assume a certain sickness rate for each disease, based on the recorded death rate for that disease. This method is arbitrary and, of course, fails to throw any light on the kind of care the patients received or on the conditions surrounding or contributing to their sickness.

"It was planned in this investigation to secure, directly from the families in which it had occurred, as full and accurate data as possible concerning sickness, including the medical and nursing service obtained, its efficiency and cost, the need of and the demand for domestic assistance in the homes where sickness existed, and the efficiency with which the demand was met . . . It was believed that data might thus be obtained which, when analyzed, would point to improvements in the methods of caring for the sick and of

16. Frankel, L. K., and Dublin, L. I.: Community Sickness Survey, Pub. Health Rep., Feb. 25, 1916.

preventing disease. . . . The attending physician was consulted either personally or by letter about each recorded case of sickness."

It was not always possible to obtain accurate data even with the best of cooperation among the people and physicians. In the field which was selected in Dutchess County it must be taken into consideration that the line of hills runs north and south, dividing the eastern and western sections, so that communication between them is difficult. The section to the west of the hill, toward the Hudson River, on which the town of Poughkeepsie is situated, contains 88 per cent. of the population of the county, and this section was chosen for the field of inquiry. The towns of Rhinebeck, Milan, Stanford and Clinton are typical rural communities with a total population of 7,223. Stanford is a country town of about 1,520, of whom 700 live in two adjoining villages, and the remaining population is scattered around the dairy farms throughout the hills. Stanford has one resident physician.

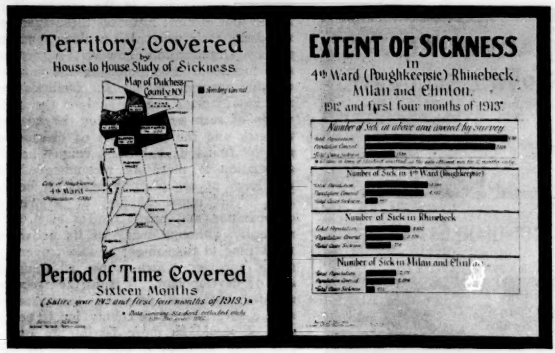
Territory Covered
by
House to House Study of Sickness
Map of Dutchess County N.Y.
Period of Time Covered
Sixteen Months
(Entire year 1912 and first four months of 1913.)
EXTENT OF SICKNESS
in
4th Ward (Poughkeepsie) Rhinebeck, Milan and Clinton,
1912 and first four months of 1913
Number of Sick in 4th Ward (Poughkeepsie)
Number of Sick in Rhinebeck
Number of Sick in Milan and Clinton

Chart 1.—Details of sickness survey.

The towns of Milan and Clinton are typical farming sections. Milan has a population of 893, and Clinton of 1,278. In none of these towns is there district or school nursing. The water supply of these towns is drawn from private wells. A relatively small number of houses are connected with cesspools, and the others still have only surface drainage with the old fashioned privy with a dug vault.

The same may be said of Rhinebeck Town, and an epidemic in the village furnished seventeen out of twenty-nine cases of typhoid. The water supply in this town is from wells and a public water supply from wells a few miles out of town.

The fourth ward of Poughkeepsie contains a population of 4,580, which is 16 per cent. of the population of the city. It contains a representative part of the main business section of the city, a wealthy residence section, and a fairly proportionate number of the homes of the poor and of those of moderate means. The ward contains an average number of the colored and foreign population of the city. Poughkeepsie has had a filtration plant connected with its water system for some years. The city's water supply is drawn from the Hudson River. Its sewage is emptied into the same river.

The term "sickness" includes only that which was so serious that it necessitated or should have necessitated the patients going to bed or securing medical aid. Slight ailments were not taken into account. By the term "adequate service" is meant that service which results in the patient's recovery when recovery can be expected, and which is of such a character that neither the patient nor the community incurs avoidable risks.

Of the 1,600 cases of sickness which occurred, 305 were men, 605 were women, and 690 were children; 506 occurred among those who were able to pay for any desired service; 882 among those able to pay for ordinary service, such as ward service in a hospital; 212 occurred among those unable to pay for any service; 920 of these obtained adequate service; 620, inadequate. In the fourth ward of Poughkeepsie, 13 per cent. of the patients were cared for in the hospitals; in Rhinebeck, 10 per cent.; and in Milan and Clinton, 3 per cent. It is interesting to note that only 55 per cent. of the 1,441 patients who remained in their homes throughout their sickness were cared for adequately; 45 per cent. received inadequate care. Only 80 per cent. of the hospital patients were cared for adequately; 20 per cent. were cared for inadequately, mainly because the patients returned to their homes before their homes were ready for them, so that proper convalescence was impossible; the care while in the hospital was adequate. Combining home and hospital care, 57.5 per cent. of the recorded patients were cared for adequately, and 42.5 per cent. inadequately.

It has been said that the very rich or the very poor are well cared for in the big cities, and those possessing moderate means find inadequate accommodation during illness. It is interesting to note that of the 506 patients of this study who could have paid for any necessary service, 81 per cent. were cared for adequately and 19 per cent. inadequately. Of the 882 patients of moderate means who could not have stood any prolonged drain on their income, 50.5 per cent. received adequate care and 49.5 per cent. inadequate. Of 212 patients who could not pay for any medical or nursing service, 32 per cent. received adequate care and 68 per cent. inadequate. It is also to be noted that of the 680 cases out of the total number of 1,600 recorded who were inadequately cared for, 21.3 per cent. occurred among those who were unable to pay for any care; 14.4 per cent. were among those who were able to pay for any necessary service, while 64.3 per cent. were among those who could pay ordinary charges but not for any length of time. In other words, it is stated that in nearly 79 per cent. of the

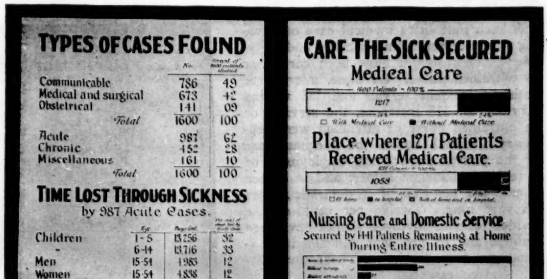

Chart 2.—Details of sickness survey.

cases in which there was found to be lack of proper services, poverty was not a controlling cause of that lack. There were in most cases no facilities for services to be had, and in other cases there was a lack of proper knowledge of what service to seek for and how to seek for it.

Four hundred and forty two patients, that is, 28 per cent. of the 1,600, could not have been cared for adequately in their own homes. Two hundred and thirty-six of these—15 per cent. of the total 1,600—who suffered from noncontagious diseases, could have been cared for adequately only in hospitals because of the nature of their cases from a medical standpoint. The other seventy-three patients, 4 per cent. of the total, who suffered from contagious diseases, needed hospital care for the same reason. One thousand, one hundred and fifty-eight, or 72 per cent. of the total, could have been cared for adequately in their homes. Of these, 1,128, or 97 per cent., required efficient medical care, while the condition of thirty patients, 3 per cent., was such that extra medical care or nursing was necessary. One hundred and sixty-five patients should have been cared for by a trained nurse. Of these, thirty-three required resident service and 132 visiting service. In 115 instances, the services of an untrained nurse or attendant were necessary. In 131 homes the adequate care of the patient implied the employment of a resident domestic helper, and in fifteen homes the services of a domestic helper on part time. Twelve per cent. of the resident service involved should have been trained, and 88 per cent. untrained attendants or domestic helpers. Of the visiting service essential, 86 per cent. should have been trained, and 14 per cent. could have been untrained.

The importance of the findings of the house to house canvass of selected districts of Dutchess County lies in the fact that there is every reason to believe that the amount of inadequately cared for sickness discovered is typical of what one may expect to find in many other communities through the state and nation. Here is a small group made up of a small city and several country communities in normal times—no unusual epidemics, no extraordinary social or industrial conditions—during a period shown by reported deaths, reported cases of contagious disease, and the unanimous testimony of physicians to have been a light year for sickness. The accompanying charts give these facts graphically, and the situation in Dutchess County can be well considered as typical for the average condition of affairs outside of big cities. Among those of moderate incomes, the majority of whom probably would come under health insurance, the chances are even whether or not a person at present receives adequate care for sickness. Among the poor the chances are two to one against their receiving proper care. It is a noticeable feature that 24 per cent., or practically one fourth of the 1,600 patients here sick, received no medical care whatever.

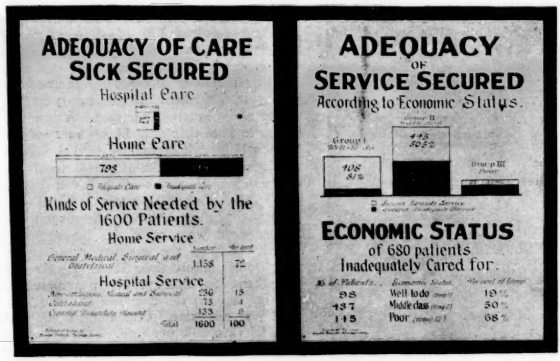

Chart 3.—Details of sickness survey.

In general, after enumerating all the agencies now acting in the county, it is found that in most instances these agencies are doing their work well in their separate fields. Organization, however, is needed to bring about cooperation on the part of existing agencies, provide for facilities that are now lacking and stimulate the provision of such new means for the care of the sick and the prevention of disease as may be found desirable. A county health association is therefore recommended as the form of organization which is desirable. This might at first be a private organization and might remain such permanently, although many of its activities from time to time might be taken over by public agencies, which is not an unusual line of development. It is further recommended that the proposed organization should cover the entire county, but to begin with it would be more feasible to organize these facilities in one or two of the districts in such a way as to admit of gradual growth and extent of the organization throughout the county without radical change. The report states that "the health association would have as its objects the coordination and development of existing facilities of the community for the care of the sick and the prevention of disease, in order to make them thoroughly efficient and readily available to all, and the development of such additional facilities as study and experience may indicate are needed. The association, however, cannot attain these objects unless it has the sympathetic interest and cooperation of the physicians of the county. Their interest and cooperation must underlie all its work and are vitally essential to its success.

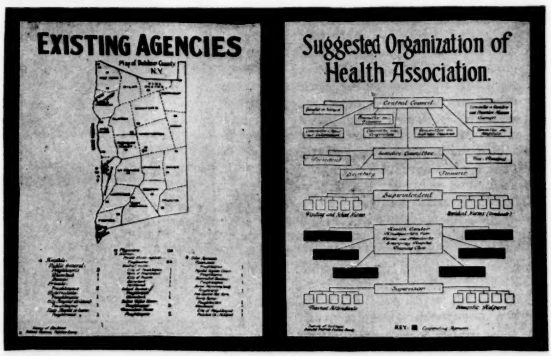

Chart 4.—Findings and suggested organization.

In order to do its work most efficiently, the association should cooperate with all the public and private medical and social service agencies at work in the county, as follows:

A. *Remedial Work.*—1. Establishing an efficient system of medical, nursing and social service for the care of the sick in their own homes.

V. 19

2. Securing the cooperation of the existing hospitals. Stimulating the provision of additional facilities where and when clearly needed.

3. Maintaining a proper distribution of patients as between home and hospital care, based on a study both of the patient's disease and of his social and economic circumstances.

B. *Preventive Work.*—1. Educating the individual: (*a*) as to personal hygiene and the observation of its laws; (*b*) as to the nature of communicable diseases and the means of avoiding them as well as the necessity of collective action to safeguard health and avert danger from these sources; and (*c*) as to the bad housing and unfit social and industrial conditions in which he lives and the means that can be employed to improve those conditions.

2. Securing the adoption and strict enforcement of public health measures, i. e., public hygiene."

Further details of this interesting investigation must be obtained from the report itself, as space does not permit further discussion. This work is best explained in the graphic charts.

PROPOSED HEALTH INSURANCE ACT

For the past year a committee of the American Association for Labor Legislation has been working to obtain a definite measure to prevent as embodying certain health insurance standards that could be modified to meet the situation in the various states of the Union. The following health insurance standards have been adopted, and the following tentative draft of a health insurance act has been agreed upon as a standard act which could be modified as the exigencies of the various states required. It is noticeable that in this draft of a bill the medical and surgical requirements are not fully formulated. This has been intentional because it was deemed necessary that the physicians of any state should be required to consult with the authorities in formulating the regulations under which they are to work.

Following are the health insurance standards and the draft of a health insurance act:

HEALTH INSURANCE STANDARDS

1. To be effective, health insurance should be compulsory, on the basis of joint contributions of employer, employee and the state.

2. The compulsory insurance should include all wage workers earning less than a given annual sum, where employed with sufficient regularity to make it practicable to compute and collect assessments. Casual and home workers should, as far as practicable, be included within the plan and scope of a compulsory system.

3. There should be a voluntary supplementary system for groups of persons (wage workers or others) who for practical reasons are kept out of the compulsory system.

4. Health insurance should provide for a specified period only, provisionally set at twenty-six weeks (one-half year), but a system of invalidity insurance should be combined with health insurance, so that all disability due to disease will be taken care of in one law, although the funds should be separate.

5. Health insurance on the compulsory plan should be carried by mutual local funds, jointly managed by employers and employees under public supervision. In large cities such locals may be organized by trades, with a federated bureau for the medical relief. Establishment funds and existing mutual sick funds may be permitted to carry the insurance where their existence does not injure the local funds, but they must be under strict government supervision.

6. Invalidity insurance should be carried by funds covering a larger geographical area, comprising the districts of a number of local health insurance funds. The administration of the invalidity fund should be intimately associated with that of the local health funds and on a representative basis.

7. Both health and invalidity insurance should include medical service, supplies, necessary nursing and hospital care. Such provision should be thoroughly adequate, but its organization may be left to the local societies, under strict governmental control.

8. Cash benefits should be provided by both invalidity and health insurance for the insured or his dependents during such disability.

9. It is highly desirable that prevention be emphasized, so that the introduction of a compulsory health and invalidity insurance system shall lead to a campaign of health conservation similar to the safety movement resulting from workmen's compensation.

HEALTH INSURANCE TENTATIVE DRAFT OF AN ACT

SECTION 1. TITLE.—This chapter shall be known as the Health Insurance Act.

SECTION 2. DEFINITIONS.—When used in this act:
"Commission" means the Social Insurance Commission.
"Fund" means a local or trade fund, as the case may be.
"Society" means an approved society.
"Carrier" means the society or fund which carries the insurance.
"Insurance" means health insurance under this act.
"Disability" means inability to pursue the usual gainful occupation.

SECTION 3. COMPULSORY INSURANCE.—Every person employed in the state at manual labor under any form of wage contract, unless exempted under Section 4 of this act, and every other employee whose remuneration does not exceed $100 a month, shall be insured in a fund or society, except employees of the United States and except employees of the state or of municipalities for whom provision in time of sickness is already made through legally authorized means which in the opinion of the Commission are satisfactory.

SECTION 4. HOME WORKERS AND CASUAL EMPLOYEES.—Special regulations shall be made by the Social Insurance Commission for the insurance of home workers and casual employees, or for their exemption from compulsory insurance.

SECTION 5. VOLUNTARY INSURANCE.—Self-employed persons whose earnings do not exceed $100 a month on an average; persons formerly compulsorily insured who, within one year from the date on which they cease to be insured, apply for voluntary insurance; members of the family of the employer who work in his establishment without wages may insure themselves voluntarily in the local or trade funds of the locality in which they live and of the trade at which they are employed, subject to conditions of this act.

SECTION 6. CASES IN WHICH PAID.—Insured members shall receive benefits in case of any sickness or accident or for death, not covered by workmen's compensation.

SECTION 7. MINIMUM BENEFITS.—Every carrier must provide for its insured members as minimum benefits: Medical, surgical and nursing attendance; medicines and surgical supplies; cash benefits; maternity benefits; funeral benefits; medical and surgical attendance and medicines for dependent members of their families.

SECTION 8. BEGINNING OF RIGHT.—Insurance, with the exception of maternity benefits, begins with the day of membership. The maternity benefits shall be payable to any woman insured against sickness for at least six months during the year preceding the confinement, or to the wife or widow of any man so insured.

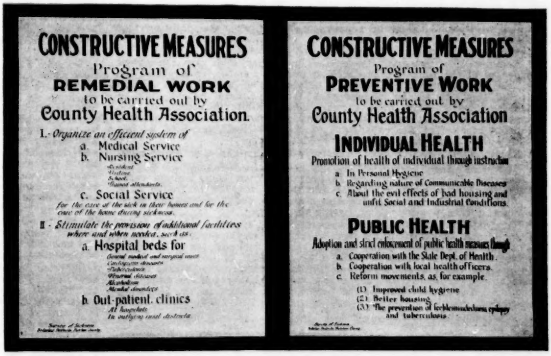
CONSTRUCTIVE MEASURES
Program of
REMEDIAL WORK
to be carried out by
County Health Association
I.- Organize an efficient system of
a. Medical Service
b. Nursing Service
c. Social Service
II - Stimulate the provision of additional facilities
a. Hospital beds for
b. Out-patient clinics
CONSTRUCTIVE MEASURES
Program of
PREVENTIVE WORK
to be carried out by
County Health Association
INDIVIDUAL HEALTH
Promotion of health of individual through instruction
a In Personal Hygiene
b Regarding nature of Communicable Diseases
c About the evil effects of bad housing and unfit, Social and Industrial Conditions
PUBLIC HEALTH
Adoption and strict enforcement of public health measures through
a. Cooperation with the State Dept. of Health
b. Cooperation with local health officers
c. Reform movements, as, for example
(1.) Improved child hygiene
(2.) Better housing
(3.) The prevention of tuberculosis, epilepsy and tuberculosis

Chart 5.—Constructive measures suggested by State Charities Aid Association.

SECTION 9. MEDICAL, SURGICAL, AND NURSING ATTENDANCE.—All necessary medical, surgical and nursing attendance and treatment shall be furnished by the carrier from the first day of sickness during the continuance of sickness, but not to exceed twenty-six weeks of disability in any consecutive twelve months. In case the carrier is unable to furnish the benefit provided for in this section, it must pay the cost of such service actually rendered by competent persons at a rate approved by the Commission.

SECTION 10. MEDICAL SERVICE.—The carriers, subject to the approval of the Commission, shall make arrangements for medical, surgical, and nursing aid by legally qualified physicians and surgeons, and by nurses or through institutions or associations of physicians, surgeons, and nurses. Provision for medical aid shall be made by the carriers by means of either:

1. A panel of physicians to which all legally qualified physicians shall have the right to belong, and from among whom the patients shall have free choice of physician, subject to the physician's right to refuse patients on grounds specified in regulations made under this act; provided, however, that no physician on the panel shall have on his list of insured patients more than 500 insured families or more than 1,000 insured individuals.

2. Salaried physicians in the employ of the carriers, among which physicians the insured persons shall have reasonable free choice.

3. District medical officers, engaged for the treatment of insured persons in prescribed areas.

4. Combination of above methods.

SECTION 11. MEDICAL OFFICERS.—Each carrier shall employ medical officers to examine patients who claim cash benefit, to provide a certificate of disability, and to supervise the character of the medical service in the interests of insured patients, physicians, and carriers.

SECTION 12. MEDICAL AND SURGICAL SUPPLIES.—Insured persons shall be supplied with all necessary medicines, surgical supplies, dressings, eyeglasses, trusses, crutches and similar appliances prescribed by the physician, not to exceed $50 in cost in any one year.

SECTION 13. HOSPITAL TREATMENT FOR ONE PERSON.—Hospital or sanatorium treatment and maintenance shall be furnished, upon the

approval of the medical officer of the carrier, instead of all other benefits (except as provided in Section 16), with the consent of the insured member, or that of his family when it is not practicable to obtain his consent. The carrier may demand that such treatment and maintenance be accepted when required by the contagious nature of the disease, or when in the opinion of its medical officer such hospital treatment is imperative for the proper treatment of the disease or for the proper control of the patient. Cash benefit may be discontinued during refusal to submit to hospital treatment. Hospital treatment shall be furnished for the same period as cash benefit. This benefit may be provided in those hospitals with which the funds and societies have made satisfactory financial arrangements which have met the approval of the Social Insurance Commissioners, or in hospitals erected and maintained by the funds and societies with the approval of the Commission.

SECTION 14. ARBITRATION COMMITTEE.—All disputes between the insured and physicians, or between funds and physicians concerning medical benefits, shall be referred to special committees composed of representatives of the interests concerned, with an impartial chairman appointed by the Commission, with an appeal to the Commission.

SECTION 15. CASH BENEFIT.—A cash benefit shall be paid beginning with the fourth day of disability on account of illness; it shall equal two thirds (66⅔ per cent.) of the weekly wages of the insured member. It shall be paid only during continuance of disability, and shall not be paid to the same person for a period of over twenty-six weeks in any consecutive twelve months.

SECTION 16. CASH BENEFIT TO DEPENDENTS.—A cash benefit equal to one third of the wages of an insured member receiving hospital treatment shall be paid to his family or other dependents while he is in the hospital.

SECTION 17. PERIODS OF PAYMENT.—Cash benefit shall be paid weekly where possible, and in no case less frequently than semi-monthly.

SECTION 18. MATERNITY BENEFITS.—Maternity benefits shall consist of:

All necessary medical, surgical and obstetric aid, materials and appliances, which shall be given insured women and the wives of insured men.

A weekly maternity benefit, payable to insured women, equal to the regular sick benefit of the insured, for a period of eight weeks, of which at least six shall be subsequent to delivery, on condition that the beneficiary abstain from gainful employment during period of payment.

SECTION 19. FUNERAL BENEFIT.—The carrier shall pay the actual expenses of the funeral of a deceased insured member, as arranged for by the family or next of kin, or in absence of such by the officers of the fund, up to the amount of $50. The funeral benefit shall be paid in case of death of a former member while in receipt of sick benefits, or death within six months after discontinuance of sick benefits because of the exhaustion of the time limit, provided he has not, within those six months, returned to work.

SECTION 20. ADDITIONAL BENEFITS.—The carriers may grant additional or increased benefits, with the consent of the Commission.

SECTION 21. EXTENSION OF INSURANCE.—When contributions cease on account of unemployment not due to sickness, the insurance shall continue in force for one week for each four weeks of paid up membership during the preceding twenty-six weeks.

SECTION 22. DIVISION OF EXPENSES.—The expenses of the funds shall be met by contributions from employees, employers and the state. The state shall contribute one fifth of the total expenditures for benefits, subject to the provisions of Section 42; one half of the balance shall be paid by the employer, one half by the employee, except that if the earnings of the insured fall below $9 a week, the shares of the employer, employee and state shalll be the proportion indicated in the following schedule:

If earnings are under	But not under	Employer	Employee	State
$9	$8	48%	32%	20%
8	7	56%	24%	20%
7	6	64%	16%	20%
6	5	72%	8%	20%
5	..	80%	0%	20%

In all cases the contributions shall be computed as a percentage of wages.

SECTION 23. AMOUNT OF CONTRIBUTIONS.—The amount of the contributions shall be computed so as to be sufficient for the payment of benefits and the expenses of administration of the fund and necessary reserve and guarantee funds.

SECTION 24. RATES OF CONTRIBUTIONS.—In funds in which employees in several industries are insured, the percentage rates of contribution may be different for different industries, according to the sickness experience.

SECTION 25. DIVISION OF THE STATE INTO DISTRICTS.—The Commission shall, within six months after this act goes into effect, divide the state into districts, no one of which shall contain less than five thousand persons subject to compulsory insurance; and shall establish one or more local or trade funds in each district.

SECTION 26. AUTHORIZATION BY COMMISSION.—No fund shall begin business until it is authorized by the Commission. The Commission shall authorize a fund only after approval of its constitution and after the names and addresses of the board of directors elected for the first year have been filed with the Commission.

SECTION 27. POWERS OF FUNDS.—Funds shall have all the power necessary to the carrying out of their duties under this act.

SECTION 28. CONSTITUTION OF FUND.—Subject to the provisions of this act, the constitution of a fund shall contain: Name of the fund and location of its principal office; if the fund is a trade fund, designation of the trade or trades for which it is created; maximum percentage of wages in each occupation at which the regular contribution may be fixed; nature and amount of benefits and length of time during which they shall be given; manner of election, number, powers, duties, and time of meeting of the committee; number, powers, duties, and time of meeting of the board of directors; method of amendment of constitution; and such other provisions as may be directed by the Commission.

SECTION 29. COMMITTEE OF THE FUND.—There shall be a committee of each fund which shall consist of not less than twenty and not more than one hundred members, to be elected annually in the manner provided in the constitution, one half by and from the employer members of the fund, one half by and from the employee members. The committee shall pass upon the annual account and report submitted by the directors.

SECTION 30. EMPLOYERS' VOTES.—Each employer member shall have as many votes for employer members of the committee as he employs workmen subject to the insurance and members of the fund, except that no one employer shall have more than 49 per cent. of the total vote cast by employers unless otherwise provided in the constitution.

SECTION 31. BOARD OF DIRECTORS.—The board of directors shall be elected by the committee for a period of one year. All directors must be citizens of the United States. The board shall consist of not less than eight and not more than eighteen directors, one half of whom shall be elected by employer members of the committee, and one half elected by employee members of the committee. No one shall be a member of the committee and a director at the same time. The compensation of members of the board shall not be more than $5 a day for each day of attendance upon the meetings of the board.

SECTION 32. RESERVE.—Every local or trade fund shall accumulate a reserve. The board of directors shall transfer to such reserve one twentieth of the annual income of the fund until such reserve is equal to one sixth of the total expenditures for the preceding three years. The reserve shall be maintained at this level. Any surplus which may accrue from the investment of such reserve may be transferred into the general account of the fund.

SECTION 33. PAYMENT OF CONTRIBUTION.—Every employer must pay to any local or trade fund on the date on which he pays his men, or at least monthly, the total contributions due from him and from his employees to such fund. He may deduct the sum paid as contribution due from each employee from his wages, but must inform him, in a method to be approved by the Commission, of the amount so deducted.

SECTION 34. MEMBERSHIP IN FUND.—Every person subject to insurance shall be an insured member of the trade fund of the trade at which and in the district in which he is employed; or if there be no such fund, of the local fund of such district; provided that while he is a member of an approved society he shall be excluded by the board of directors from membership in the fund. The Commission shall provide for the case of persons employed at one trade but temporarily employed at another. Membership in a local or trade fund shall cease as soon as the insured becomes a member of another local or trade fund. Any employer shall be an employer member of all funds of which any of his employees are members.

SECTION 35.—VOLUNTARY INSURANCE.—A person entitled to voluntary insurance must be admitted on application to membership in the trade fund of his trade in the district in which he is employed, or if there be no such fund, then in the health fund of such district: provided, that, persons who have been compulsorily insured members within the last twelve months, the by-laws of any fund may prohibit the admission to voluntary insurance of a person who has not passed a satisfactory medical examination by its medical officers, and that the application for admission be subject to the same condition as an application for ordinary life insurance. The contribution of the voluntary member shall be equal to the contribution required of the employer and employee for a compulsory member of the same trade and earnings.

SECTION 36. LOSS OF VOLUNTARY MEMBERSHIP.—A person voluntarily insured loses his membership if he acquire membership, either voluntary or compulsory, in another fund or society, or if he be in arrears for one month in the payment of his contributions, unless this period be extended by the constitution.

SECTION 37. FINES AND PENALTIES.—Funds may fine their employer and insured members and suspend insured members from benefits for violation of their rules or regulations or for fraudulent representations made with the intent of securing or aiding another to secure benefits, in acordance with rules approved by the Commission providing for such fines or suspensions. If an employer fail or refuse to pay the contribution which he is required to pay under this act the carrier to whom they are due may recover the same with interest at 6 per cent. by suit in a court of competent jurisdiction, and the employer shall not be entitled to deduct any part of the sum from the wages of his employee or employees.

SECTION 38. APPROVED SOCIETIES.—A labor union, benevolent or fraternal society or an establishment society shall be approved by the Commission only after hearing the local or trade funds affected and only if:

It is not carried on for profit, but reasonable salaries paid officials shall not be considered profit.

It is under the absolute control of the insured members in so far as the insurance regulated by this law is affected, except that the employer may appoint one half of the governing body of an establishment society.

It shall satisfy the Commission that it is in a sound financial condition.

It grants at least the minimum benefits provided in this act.

It has a membership of at least five hundred persons insured for at least the minimum benefit provided under this act or their equivalent, except that in the case of establishment societies in which the employer satisfactorily guarantees the payment of benefits, the number of members may be fixed by the Commission.

Its operation will not, in the opinion of the Commission, endanger the existence of any local or trade fund.

In case of an establishment society, a majority of the employees subject to insurance request approval, and the employer's contribution is at least equal to that of all the employees.

The approval of the Commission may be withdrawn at any time upon its finding, after hearing the society affected, that any of the required conditions are no longer satisfied. The Commission may, after a hearing, permit an establishment society to accept, on conditions satisfactory to the Commission, as members all persons subject to insurance in its district.

SECTION 39. EMPLOYERS' CONTRIBUTIONS.—The Commission shall assess upon every employer any of whose employees are insured in labor union, benevolent, or fraternal societies a sum equivalent to the employers' contributions had such employees been members of funds. This sum shall be paid in monthly instalments into the guarantee fund establishhed by the Commission.

SECTION 40. STATE CONTRIBUTIONS.—The state shall contribute to every approved society one fifth of its total expense for benefits and for the expense of health insurance under this act, subject to the provisions of Section 42.

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SECTION 41. HEALTH INSURANCE UNION.—Two or more health insurance carriers within a district may combine for the administration of the medical benefit subject to the approval of the Commission. The Commission may, after notice to and hearing of the parties of interest, withdraw its approval and dissolve the union, making such disposition of its property as may seem to it in the best interests of the insured.

SECTION 42. GUARANTEED FUND.—The Commission shall reserve 10 per cent. of the contributions of the state to the carriers and pay it into a fund to be known as the guarantee fund, from which it shall contribute for the relief of any carrier on the application of its board of directors after investigation by the Commission. A contribution shall be made only where, in the judgment of the Commission, the necessity arises from epidemic, catastrophe, or other unusual conditions, and shall never be made where, in the opinion of the Commission, the deficit is due to failure or refusal of the directors to levy proper rates of contributions. When and as long as, in the opinion of the Commission, the guarantee fund is sufficient, the Commission shall make no reservation for this purpose.

SECTION 43. STATE SOCIAL INSURANCE COMMISSION.—A state Social Insurance Commission is hereby created, consisting of three commissioners, to be appointed by the governor, one of whom shall be designated by the governor as chairman, and one of whom shall be a physician. The term of office of members of the Commission shall be six years, except that the first members thereof shall be appointed for such terms that the term of one member shall expire on Jan. 1, 1918; one on Jan. 1, 1920, and one on Jan. 1, 1922. Each commissioner shall devote his entire time to the duties of his office, and shall not hold any position of trust or profit, or engage in any occupation or business interfering or inconsistent with his duties as such commissioner, or serve on or under any committee of a political party. The Commission shall have an official seal which shall be judicially noticed.

SECTION 44. SECRETARY.—The Commission shall appoint and may remove a secretary, at an annual salary of ———. The secretary shall perform such duties in connection with the meetings of the Commission and its investigations, hearings and the preparation of rules and regulations under the provisions of this Act as the Commission may prescribe.

SECTION 45. OFFICERS AND EMPLOYEES.—The Commission may appoint such officers, other assistants and employees as may be necessary for the exercise of its power and the performance of its duties under the provisions of this Act, all of whom shall be in the competitive class of the classified civil service; and the Commission shall prescribe their duties and fix their salaries, which shall not exceed in the aggregate the amount annually appropriated by the legislature for that purpose.

SECTION 46. SALARIES AND EXPENSES.—The chairman of the Commission shall receive an annual salary of ——— and each other commissioner an annual salary of ———. The commissioners and their subordinates shall be entitled to their actual and necessary expenses while traveling on the business of the Commission. The salaries and compensation of the subordinates and all other expenses of the Commission shall be paid out of the state treasury upon vouchers signed by at least two commissioners.

SECTION 47. OFFICERS.—The Commission shall have its main office in the capitol of the state and may establish and maintain branch offices in other cities of the state as it may deem advisable. Branch offices shall, subject to the supervision and direction of the commission, be in immediate charge of such officials or employees as it shall designate.

SECTION 48. POWERS OF INDIVIDUAL COMMISSIONERS.—Any investigation, inquiry or hearing which the Commission is authorized to hold or undertake may be held or undertaken by or before any commissioner, and the award, decision or order of a commissioner when approved and confirmed by the Commission and ordered filed in its office shall be deemed to be the award, decision, or order of the Commission. Each commissioner shall, for the purpose of this Act, have power to administer oaths, certify to official acts, take depositions, issue subpoenas, and compel the attendance of witnesses and the production of books, accounts, papers, records, documents and testimony.

SECTION 49. POWERS OF COMMISSION.—The Commission may adopt all reasonable rules and regulations and do all things necessary to put into effect the provisions of this Act.

SECTION 50. JURISDICTION OF COMMISSION TO BE CONTINUING.—The power and jurisdiction of the Commission over each case shall be continuing, and it may, from time to time, make such modification or change with respect to former findings or orders thereto as in its opinion may be just.

SECTION 51. REPORT OF COMMISSION.—Annually on or before the first day of February the Commission shall make a report to the governor, which he shall lay before the legislature, which shall include a statement of the apportionment of the state contribution, statistics of sickness experience under this act, a detailed statement of the expenses of the Commission, the condition of the state guarantee fund, together with any other matter which the Commission deems proper to report, including any recommendations it may desire to make.

SECTION 52. SOCIAL INSURANCE COUNCIL.—The social insurance council shall consist of twelve members, six of whom shall be elected by employer directors of the local and trade funds and six by employee directors of the local and trade funds; their term of office shall be two years, except that in the first election three of the employer and three of the employee members of the council shall be elected for one year; they shall receive a compensation of ——— a day for each day spent on the business of the council and shall be reimbursed for reasonable expenses.

SECTION 53. OFFICERS OF COUNCIL.—The council shall elect a president from its own number; the secretary of the Commission shall act as the secretary of the council.

SECTION 54. MEETINGS OF COUNCIL.—The council shall meet during the first week of December, of March, of June, of September, each year. Special meetings shall be called by the president on the request of at least five members of the council or of two members of the Commission, at any time.

SECTION 55. DUTIES OF COUNCIL.—The annual report and recommendations of the Commission shall be laid before the December meeting of the council before transmission to the governor, and the council may approve them or make a separate report and recommendations to the governor. All general regulations proposed by the Commission shall be laid before the council at a regular or special meeting for discussion before final adoption, except in cases of urgency, to be determined by the Commission and in this case the regulation shall be laid before the next regular meeting of the council or a special meeting called for the purpose.

SECTION 56. MEDICAL ADVISORY BOARD.—The state medical societies shall choose a medical advisory board which shall be consulted on medical matters.

SECTION 57. SETTLEMENT OF DISPUTES.—All disputes arising under the act, except those provided for in Sections 14 and 58, shall be determined by the Social Insurance Commission either on appeal from the proper authority or from the carrier or, in case of disputes between carriers, by original proceedings. The Commission may assign any dispute for hearing and determination to a dispute committee composed of one employer and one employee member of the council, and a member of the Commission, as chairman, the members of the council to serve in turn on the dispute committee for periods of one month; either party may appeal from the decision of the dispute committee to the Commission within thirty days from the date of rendering the decision.

SECTION 58. MEDICAL DISPUTES.—All disputes regarding medical benefit which have been appealed to the Commission shall be referred by the Commission to the medical advisory board, which shall report to the Commission, and the Commission shall not decide any such dispute until after a report has been made by the board.

SECTION 59. SUITS AT LAW.—Suit shall not be brought in any court on any matter on which an appeal is allowed to the Commission, until after a decision by the Commission or of a dispute committee, and the statutes of limitations shall not begin to run in such cases until after decision of the Commission or dispute committee is filed.

RELATION OF PHYSICIANS TO HEALTH INSURANCE LAWS

It is axiomatic that the medical profession is a necessity in the carrying out of any health insurance laws. It is equally self-evident that any laws controlling medical benefits and the medical profession must be so formulated as to render justice to three groups of human beings with often diverse interests, that is, the insurance carriers, the workmen and the physicians. The interests of these three groups are not incompatible if the balance of strict justice is kept even, but there is endless friction and endless and bitter antagonism if this strict justice is not given. In the carrying out of these insurance laws in Europe the physicians have had to fight to obtain the justice that was due them. In Germany the friction has been between the insurance carriers and the physicians. The physicians have rendered adequate service to their patients. When in the struggles the adequacy of the service was questioned, the German government has forced the offending bodies, whether insurance carriers or physicians, to give in. The justice of the doctors' cause has been shown by the fact that they have won nine tenths of their struggles. In England, on the other hand, the struggle has been between the insurance carriers and the government against the physicians. The physicians have won against the carriers, divorcing themselves from that lay control, and have forced a compromise from the government, and in the net results have carried the majority of the contested points. The result, however, has been a compromise, since the physicians receive a better compensation than in Germany, although they do not give as adequate a service to the patients.

From the point of view of the insurance carrier, as economical a rate must be obtained as is compatible with good service to the sick, and here the question comes naturally of fairness of rates to the physicians and adequacy of service. The carriers will demand a machinery by which control of dishonest physicians is brought about and a similar control by which malingering and valetudinarianism on the part of the patients is reduced to a minimum or prevented altogether. The carrier, on the other hand, must be forced to render a fair remuneration to the physician for services given and must also be forced to give strict justice to the claims of sick benefits presented by the workmen. In England the Fabian report shows that in the early years of the insurance act there was often gross injustice done in the matter of granting and refusing sick benefits among the workers and also a great deal of justified criticism that many physicians were prolonging certificates for sick benefits beyond what could have been honestly given.

From the point of view of the wage earners, they will demand that an adequate medical service be given them and that they be treated justly in the consideration of incapacity for work by the physicians and equally justly in the granting of sick benefit claims from the carriers. On the other hand, they must acquiesce in the fair refereeing of doubtful claims of either question and must assist in the inspection and refereeing necessary to prevent malingering and valetudi-

narianism. The physicians on their part have a right to demand a fair remuneration for services given and must agree to give willing and adequate medical service. On the other hand, they must submit to strict control by the profession of dishonest or delinquent members or they must submit to lay control for the punishment of such members. Physicians in any given state may demand that certain fundamental principles regarding medical service shall be incorporated in the law itself. This has the advantage of being more difficult to change than regulations, and for certain broad general principles it may well seem to be advisable.

Following the example of the profession in England, the physicians will, without doubt, in this country demand that they have adequate representation on the various controlling bodies administering the law. This will probably be true for the representation on the insurance commission itself and then on down through the various arbitration and executive committees to their own committees composed only of panel physicians or physicians actually doing the insurance work among the workingmen. After the adequate representation specified in the law, it would seem wisest to leave further regulation of the medical work to be done under the Health Insurance Act, not to the hard and fast designation of the law itself, which must be changed only through legislative action, but to the medical regulations under the Commission, which would, therefore, be more flexible and could be changed easily by executive act. Thus the law could be made to run more smoothly because more easily changed, if it were found at any time to be bearing unjustly in the carrying out of its medical functions. It would seem wise to leave these regulations to a body composed in part of the representatives of carriers and of workmen of each district and representatives of the physicians elected by doctors working in the insurance district under the chairmanship of a member of the State Controlling Commission or a judge. Thus all interests—the employers, the employees, the state, and the physicians—would be represented in the discussion and formulation of these regulations and the desired working equilibrium of exact justice to all interests would be obtained.

It has been found necessary in all countries abroad to have committees of physicians who do the insurance work, who meet regularly and who have the power of scrutiny over the economy or extravagance in the ordering of drugs, and who have some degree of power for the discipline of physicians in minor matters and who hear and decide disputes among the physicians themselves. Complaints between the physicians and the societies, or between the physicians and the carriers, or between physicians and workingmen go to other committees composed both of the workingmen and the physicians. In England, particularly, there are committees representing all the physicians, whether on a panel or not, in a given neighborhood. There are also, as has been pointed out, other committees to which disputes go on appeal. These committees are either regularly instituted, as in Germany, and are permanent, or they may be formed as inquiry committees for the time being, as in England, to consider certain definite disputes or definite questions in dispute laid before them for referee decision under the Commission. The German method of appointment of committees is the simpler and more direct, that of the English law being much more complicated and demanding more detail in its regulations.

In both countries there are the registered chemists or pharmacists, and in neither country are the physicians allowed to dispense medicines except in England, in sparsely settled districts under certain definite rules. Again are disputes between pharmacists and the physicians regulated by committees, and regulations permitting appeals up to the Commission are formulated. All this intricate mechanism is necessary to bring about the smooth running of an intricate law.

One of the questions most persistently fought for by the profession in Germany, and one point which was won by the profession in England, is that of free choice of the physician by the patient. This, of course, must be within the limitations of consent by the physician to have the patient, and with the physician chosen especially within a reasonable distance of the patient, that he may give good service. Against this free choice one party in Germany, as represented by the Dresden Society, has insisted on having any given area divided into districts and a salaried physician placed in each district. All insured persons are expected to consult the doctor in their district, but in case of dissatisfaction their wishes are consulted as far as possible. All appointed doctors are free to engage and do engage in private practice.

Still another method sometimes advocated is that practically of a state medical service, with salaried physicians, in which all persons in a certain district are given the medical attention of certain specified physicians, or, of course, there may be free choice of physicians among a certain limited number of district doctors. This state service has best been exemplified in late years in the medical service rendered in the Panama Canal Zone. It was here shown how brilliantly and successfully such a generalized system of state medicine could be carried out in certain areas.

Left to the profession to decide, it is probable that free choice of physician, without limitation, will be chosen in the majority of instances. There is no question that the human relation between physicians and patient will be demanded and should be granted, even under health insurance laws or under state medicine where possible. This is particularly advisable where the care of families is in question, for justice demands that whatever may occur to the children of a family it should be the privilege of the parents to feel that they have had the physician of their choice and that no matter how unfortunate the outcome of any sickness may be they have done all that was possible for them to do and have blocked up all loopholes for regrets.

Even with the free choice of physicians there must be regulated the limit of the panel or the limit of the number that any one physician may enroll to whom he is willing to render service. It is a curious feature in the working of the English law that two years after the act had been in operation the Fabian Committee reported that one fifth of the physicians were caring for one half the patients and four fifths of the physicians for the other half of the patients. Thus there was the evidence of overcrowded panels and hurried and inadequate service, which is, as has already been said, the curse of the capitation system of payments and of lodge practice. There must, therefore, be the limitation of the number of patients or families that a physician can care for. Considering that in all probability each patient will be sick ten days in a year, one can calculate the probable number of patients that could be visited daily. For instance, if a thousand patients, or 500 families, with three to a family, that is, 1,500 patients, were permitted to each physician, he would have from 10,000 to 15,000 sick days a year to care for. That would be from twenty-eight to forty-two patients a day of minor and major ailments. This will be recognized as being all that can be conscientiously well cared for. It might be claimed that with one or two assistants a man might well care for more patients, but the question of assistants brings up the question of the lack of personal care that the physician gives, or does not give, to the patients he has contracted to serve, and probably it would be wiser that no assistants who are not on the panels should be allowed. Two or more panel physicians entering into partnership, and who were willing to pool their panels and render services of mutual aid to each other, would certainly not be objectionable.

REMUNERATION OF PHYSICIANS

In considering the remuneration of physicians under health insurance it is necessary to consider certain medical customs and habits of thought. The medical service is always an individual one, and the state requires it to be individual. Medical public opinion demands that the physician shall give an adequate and just service to his patient, and that the physician shall not permit himself to be placed in positions where he gives careless, incompetent service, to the injury of those under his care. Any physician neglecting this standard loses caste. He is condemned by his colleagues, and the position or system in which such service is likely to occur is held in contempt by the profession, and has been classified under the opprobrious name of "contract practice." All medical service is really a contract, and many physicians under salaries, such as with insurance companies or railroads, are

not condemned, nor do they lose caste, by accepting such contracts. But any contract which carries with it an unreasonable amount of work by the doctor, which in turn forces neglectful, hurried service to the patients, is always condemned. These situations are usually found in certain lumbering and mining camps and under other corporations, and in the familiar lodge practice in large cities.

Lodge practice and other condemned forms of contract practice are all under the capitation plan of remuneration, and the capitation idea of service under sickness insurance has necessarily these inherent faults, which cannot be eradicated and can be controlled only to a limited extent if they can be controlled at all. By this form of capitation is meant the per patient per year form of payment to the doctor. Another form of capitation which is used abroad is frequently used in a compromise with the free choice system of the doctor by the patient; that is, a sickness society has a certain amount of funds that it can pay for medical services to the doctors. This lump sum it gives to some association of doctors, and the physicians charge up each visit and each act of service rendered to each patient as so many points of work done against the medical society. Usually every three months each physician hands in his account to the medical society, and the total number of points are divided into the total amount of funds, and the remuneration paid to the physicians pro rata. The two faults in this country for this method are, that there is no society or association of physicians which is sufficiently universal in its membership to justify such a procedure, for many men who would work among the working classes do not belong to the medical societies, and if any control was attempted through the present societies, there would be many doctors working among the insured who would be beyond such control; and, furthermore, in times of great amount of sickness, the more work done the less is each point of service worth, and after a certain amount of service has been given by the physicians, the more work they do, the less money do they receive in ratio to work done. If the total amount paid by the societies remained the same, and if twice as much work were done by the doctors in an epidemic as in an average year, each point would be worth half as much and the remuneration would be the same under great stress of work as under an average year. This is not just remuneration, and would soon bring a resentment on the part of physicians because of undervaluation of their work and the injustice in it, and there soon would develop a situation similar to the other form of capitation of overcrowded work and the underpaid men.

There is, in some parts of Germany, the regularly paid physician under definite salary from the society. This might or might not work out well, because it would be a similar form of contract to that of the railroad surgeons, but it would be very liable in sickness insurance to be abused, and soon the inherent faults, as in capitation, would develop. Moreover, any sickness insurance society could hire only a certain number of physicians, and unless they arbitrarily refused free choice of physicians to their members and divided them in equal numbers among their salaried physicians, the natural difference in personality of the physicians would immediately cause the practice of some to be overcrowded while that of others would be neglected, and again the inherent faults under capitation would develop.

One comes to the other form of medical service—that of visitation, that is, a stated fee per visit per patient, or with a fee graded according to character of services, with free choice of the physician by the insured, either with an unlimited number of patients or with a limited number of patients under a panel system, by which a definite number of patients can be apportioned to any one doctor and under which all patients must be apportioned to some doctor—this with the consent of the physicians and patients; or, absolute free choice of the physician by the patient, with no panel and no control by the commission of the physician through his position on the panel; or free choice of the physician by the patient, with control of the physicians through a series of committees.

It has been generally claimed that free choice of physicians and this visitation method of so much per patient per visit always increases the number of visits and the expense of medical care to the insuring societies. These claims, however, were not substantiated in an investigation of the subject in Manchester, England. There is no question that from the medical point of view the visitation system is the most just. There is no question from the patient's point of view that they obtain by this means the best service. There is less danger of neglectful and overcrowded services being rendered to them; it eliminates the inherent faults of the capitation system, but increases the expense over capitation because it gives a fair return, which capitation does not do. It seems to increase the opportunity for malingering and simulation, which, unless controlled, become the bane and ruin of any social insurance system.

The ethics of any profession are but the moral customs of the general community modified to suit the peculiar services which that given profession performs, and the ethics of the average member of any profession will not rise any higher than the average of the community in which he lives. In any community, therefore, there will be dishonest physicians, whose acts must be controlled that they may render an honest return to the patients and to the insurance carriers. Therefore, this human factor necessitates a scheme by which this control can be most economically and efficiently exerted.

WHO SHALL DECIDE WHEN A PATIENT HAS RECOVERED

In all sickness insurance, there is one mooted question that constantly arises, and that is, who shall decide any dispute between a physician and an insured member as to whether or not this patient should go back to work and his benefits cease? There is always trouble if this work is left to the panel physician alone. Patients will demand leniency, will go to the doctors who are lenient, and physicians, unless of rugged character, will be afraid of losing their patients and injuring their income unless they are lenient, and thus the expense of the insurance carriers will be enormously increased by a continuance on the sick list of patients who should be at work. If, whenever this mooted point arises, the decision could be referred to some impersonal committee or to some regularly constituted salaried medical referee, it would enormously improve the working of the insurance act. There will probably be required a medical inspection department under a medical referee or referees to control malingering and valetudinarianism.

In considering this matter of dispute between the insured and the physician as to whether or not the patient is fit to work, some figures in the experience of the Leipzig and Königsberg societies are of interest. In the Leipzig society, in 1910, there were 8,497 requests made that the confidential medical advisers of the society should ascertain whether or not the patients genuinely were unable to work. Of these, 3,382 were made by the treating physicians and 5,115 by officers of the society. Those who did not come up for examination, but went to work of their own choice, numbered 2,670. Of the 5,827 examinations made, 47 per cent. of the patients were declared able to work forthwith, 12 per cent. were declared able to work at the end of the week, 10 per cent. were put off to be reexamined at the end of one or two weeks, and 31 per cent. were declared unable to work.[17] In the Königsberg society in 1909-1910 there were 4,937 who were examined by the confidential medical adviser. Of these, 2,527 were examined at the request of the society, 344 at the request of the attending physician, and fifty-seven at the request of the patients who considered that they had been wrongly certified as able to work. Of these, 33 per cent. were certified as able to work forthwith; 21 per cent. as able to work in from three to eight days; 23 per cent. as unable to work; and 18 per cent. went to work immediately and did not come up for examination.

The testimony concerning the medical referees taken before the Departmental Committee on Sickness Benefit Claims in England strongly favored referees paid by the central commission, not by the approved societies or the insurance committees under the commission. That is, referees were desired who represented the central body. There was a division of opinion whether these should be full-time referees or half-time referees. It has been said, and probably not unjustly, that if half-time referees were employed there would be a greater number of referees and probably a better class of physicians could be obtained than if full-time referees were employed.

17. Gibbon: Medical Benefits in Germany and Denmark.

It was further brought out that it would perhaps be possible to have members of the panel committee act as referees to decide cases that were not in their districts and among patients who could not possibly become their patients, so that in any given group of panel physicians there would be an interchange of the work of refereeing. This would have the advantage that the work would be done by men who would best appreciate all the necessary points of view which the special work demanded. On the other hand, this method of reciprocal refereeing would have the disadvantage that it would lack the element of medical inspection on the part of the commission, which referees working under and paid by the commission would possess. At first glance the addition of the expense of the medical referees to any insurance scheme would seem to add greatly to the expense of the medical administration, but the existence of the referees would save in sick benefits more than enough to pay for their salaries; besides, the salaries of the referees should not be charged to medical expense. They should be looked on from the administration point of view and charged to administration expenses, for they are necessary for efficiency and effectiveness in the administration of the law and are representatives of the executive department and should be so considered.

THE SPECIALIST IN HEALTH INSURANCE PRACTICE

From the patient's point of view, efficient medical service is necessary. Any general sickness insurance law among the poor will develop an increase of medical service and demands. Some form of sickness or injury has been the calamity through which the poverty of the poor has been changed to destitution in the majority of those applying to charity for aid, so that often all that has separated poverty from destitution has been the ability of the wage earner to go to work each day. Just so soon as the wage earners realize that they can have medical care as their due, without further expense than already borne by them, it is bound to increase enormously the demands on the medical profession. Of course, after a few years, when they become used to the idea, the mass of trivial and unnecessary calls will diminish, but a certain amount of unsuspected sickness among the poor will come to light and will probably increase the necessities of medical care beyond any calculated expectations. Adequate medical services to the patient must contain, at times, the possibilities of more than the average practitioner can necessarily furnish. The standard demanded from the individual practitioner will probably not exceed that demanded under the English act, which considers that adequate medical attention and treatment is that treatment of a kind which can consistently, with the best interests of the patient, be properly undertaken by a general practitioner of ordinary professional competence and skill. The physicians of the Book Printers' Sickness Fund, of Berlin, agree to care for all members not requiring hospital treatment, and to expedite recovery to the best of their power. In the Leipzig Sickness Fund, physicians agree to give requisite treatment in accordance with the recognized custom of the medical profession. The English act does no more than provide the advice of the panel doctor as to how further treatment may be obtained. It fails noticeably to furnish expert care or advice or adequate hospital accommodations; it only attempts to provide this in tuberculosis.

In the sickness societies of Germany there are many specialists to whom the patients may go. The Leipzig society employed 130 specialists and twenty-four dental surgeons out of its total of 400 doctors; the Dresden society sixty-four out of its total of 226. The ratio of specialists to general practitioners should be at least one to five. These necessary details of organization must be left to the arrangement of the local societies. There is no doubt, however, but that the details of what is ordinary and what is extra work, such as the difference between day calls and night calls, the difference between office visits and home visits, the detail of the ability of the general practitioner to call in a consultant if he or the patient shall demand it, what shall be the fees under these circumstances, or whether all consultation work shall be done by the medical referees, are all questions coming up for decision.

There is no question that modern medical treatment demands more team work among physicians than was formerly done. The bacteriologic examinations of sputum, of throat cultures, etc., are done in this country free of charge by the city and state departments of health. But Roentgen-ray diagnoses and any other special diagnostic procedures must still come under the specialist category.

HOSPITALS AND DISPENSARIES UNDER A HEALTH INSURANCE LAW

This brings us to the question of the dispensaries, and back of the dispensaries, the hospitals. Up to this time the dispensaries and the hospitals have been the expression of the amount of free medical care that the city or state governments, or private corporations, were willing to give to the poor. A well-conducted and well-organized dispensary offers the most economical and efficient method of giving to the patient the many specialized medical services that the varying nature of their illnesses may require. More diversified medical and surgical work is performed in the dispensary than is performed in the hospitals. There is less specialized service in the majority of the hospitals than in any dispensary of even moderate size. But there are more hospitals given over to special work than there are dispensaries so constituted, although most special hospitals have also a dispensary attached to them for the sake of obtaining patients to fill the hospitals. Most of the medical positions in dispensary or hospital are occupied without remuneration, the medical experience being sufficient compensation in this country for whatever time or knowledge the doctor may bestow. Abroad, in certain countries, similar positions have a salary attached to them, and medical men are not expected to give their medical or surgical knowledge and services uncompensated.

Under the sickness insurance law, the general dispensaries present opportunities for an adequate and well-developed method of furnishing abundant services in special branches of medical or surgical care to all patients who are not too sick for hospital care and who may require some special service which the average general practitioner cannot give them. The situation, however, will arise whether or not the dispensaries should be confined to the use of the development of the specialties and all the general medical care given in the homes of the patients, or whether patients shall be allowed to choose between their own doctor and some general practitioner in the dispensary as far as the general medical care is concerned. This is a question which contains serious possibility of dispute. It may be that the general medical classes of a dispensary may, in the end, be developed into a place where patients may go for expert diagnosis on the plane of the consultant, being referred back to their physician for care or being referred to specialists, if such be necessary; the dispensary becoming then an institution for special care or expert diagnosis and not containing, as now, classes in ordinary internal medicine. However this may be decided, medical services rendered in the dispensary must, in future, receive remuneration, and free dispensaries soon be a thing of the past. Physicians in the dispensaries, moreover, must be under control of the committees controlling the doctors in general insurance practice, and if the dispensaries are run by private corporations, it must be within the power of the Commission to forbid persons under the insurance act to go to dispensaries which do not give adequate medical service. In all probability, if the Commission should publish to the insured that a certain dispensary was failing to give adequate medical care, the stigma of such publication would soon force any private corporation to give adequate medical services. The rules and regulations by which patients are permitted to accept the hospital provision of the sickness insurance act will have to be under definite agreement and the care received in the hospitals under definite supervision.

Under the workmen's compensation law, disputes arise because in the same ward one patient will be under the compensation law and another not, and any surgeon is liable to be accused by the patient not under the compensation law of neglecting him and favoring the man under the compensation, because of the extra fee given to the surgeon. The workmen's compensation law makes certain poor patients pay patients and necessarily leaves others out of this category. Sickness insurance laws will probably act in the same way in the medical wards in the same hospitals, and the human element of envy and resentment on the part of the patients will bring many

disputes and complaints of the service rendered to them. It is doubtful if the attending physicians and surgeons in the large public hospitals should take positions on insurance panels. It would seem wiser if they did not. They usually have reached a position in their profession where their private practice is not among those persons who will be insured by the sickness insurance act. It would seem wiser, therefore, that it should become a custom that the attending physicans, at least, should care for all alike without remuneration, and that the special work required by the sickness insurance should be done by some assistant and not by the attending physician. The attending physician, therefore, in charge, would give his services to all alike, and there could be no criticism or envy on the part of the patient for care received. The decision required by the sickness insurance act as to when the patient was ready to leave the hospital and go to work, of filling out the certificate necessary under the working of the act, the special daily hospital care and attention required, should be done by some assistant against whom the question of unequal attention between patients could not arise. Adequate supervision of smaller hospitals in which there is no house staff must be formulated by the Commission, for there is no question, as stated above, that adequate medical and surgical service must be given and must be controlled, whether this service be in the homes of the patients or in the hospitals and dispensaries to which they may go.

We have considered here the working and necessities of medical care and control under a compulsory sickness insurance as exemplified chiefly in England and Germany, as these two types of compulsory insurance give the best examples of the results of the various methods employed for the carrying out of compulsory sickness insurance. Many difficulties of administration and many failures in administration have developed in both countries through the employment of the capitation plan of remuneration to the physicians. In Germany this has resulted in bitter animosity between the medical profession and the insuring societies, and bitter contests for increased remuneration in which, in the enormous majority of contests, the physicians have won. In England it has resulted in inadequate care being given to the majority of the insured under the act. In this country it would seem to be useless to attempt to repeat the inherent faults of capitation payment, and medical opinion and customs in this country are already in vigorous antagonism to this form of contract practice. It would seem unwise, therefore, to start with the bitter antagonism of the medical profession against capitation. This would seem to force the necessity in this country of a remuneration based on the visitation system. With this point of view clearly recognized, many difficulties experienced abroad will not occur, and, in fact, the chief stumbling block to the successful carrying out of the law is removed.

General Comment

This voluminous report has made no pretense of arguing for or against health insurance. It has made no attempt to bring together the advantages or disadvantages to be gained by the community, or its desirability as a measure of health or social necessity. The Committee on Social Insurance offers it as a compilation of what has been done abroad and of the present situation in the United States. It has brought forward only those points which would seem to be of interest to the medical profession and which will be useful to them in preparing a study of the situation in any given state in this Union where health insurance is likely to be brought up and placed on the statute books.

The effective administration of any health insurance law must be done through limitation by trade or geographic area of its application. This is clearly seen in the working abroad of the various laws in the different countries. The English law is difficult of administration because it violates this fact. Germany and Austria show marked effectiveness because their laws follow this peculiarity. Furthermore, the results obtained in working out the details of the law will be greatly influenced by the financial management of it. In Germany the percentage of expense borne by each member—the employer, the employee, and the state—is designated in percentage, the actual amounts necessary being left to experience and management to obtain. In England a definite monetary amount was laid down by law, and with the errors of actuarial calculation, it has been found that these amounts are insufficient to give the desired results to the workers. Eighteen cents a week as a premium was insufficient to give a full measure of sick benefits to the workers or just remuneration to the physicians and medical benefits to the sick, let alone the expenses for administration. The English law fails to give more than the ordinary medical service and gives but a minimum of surgical apparatus and appliances, with the result that the sick do not receive the care they should, though the physician is justly remunerated, and the lack of proper appliances keeps many sick on the sick benefit funds at the unnecessary expense of the insurance carriers. In Germany the generous application of medical benefit and surgical appliances brings back the tremendous saving in time and wages. As was pointed out by the Judicial Council last year, the expense of $8,000 to specialists saved over $160,000 in wages and sick benefits.

However one may criticize the details, the insurance act has unquestionably improved the condition of the working classes which have come under the law. This is a very noticeable feature in England. It will be of great interest to note in the future the effect of the great war on these countries and on the laws of social insurance.

The Committee on Social Insurance has endeavored to bring forward as much detail as possible regarding the remuneration of physicians under these laws in order that the economic results on the lives of the physicians could be fairly studied.

The more these laws of social insurance are studied the more it is evident how essential is the medical profession in their administration. It is equally essential that the profession should clearly understand these laws, and the Committee on Social Insurance, therefore, offers this study of health insurance for the assistance of the profession in obtaining this necessary information.

Respectfully submitted.

ALEXANDER LAMBERT, Chairman.

Committee on Women's and Children's Welfare

To the Council on Health and Public Instruction:

Three years ago, at the beginning of my chairmanship of the Committee on Women's and Children's Welfare, we adopted the policy of developing one line of action. At that time the baby health movement was of the most immediate interest, and offered, as it seemed to us, the greatest possibilities among the various phases of public health work then under consideration; we therefore centered our work on it.

By the end of the first year our official score card was in the hands of the public, together with Pamphlets 4, 5 and 7. Pamphlets 4 and 5 contain directions for measuring and scoring of babies, plans for conducting conferences, and book lists; Pamphlet 7 is devoted to care of the baby. At the close of the second year the movement had begun to swing from the contest to the conference ideal, thus establishing a more permanent and scientific basis for our work—that of development of the frail child, rather than recognition of the already healthy one. During the second year the women's clubs throughout the country began to grasp more thoroughly the possibility of the movement, and the Children's Bureau to give its active support. But to show how even our committee underestimated further development we quote from a concluding paragraph of the second annual report, p. 39:

"With contests giving way to conferences; with the gradual elimination of cash prizes; with the steady increase in number of permanent stations, and with increased legislation establishing bureaus and child hygiene departments, we feel that the baby health movement is sufficiently developed to be taken care of with ease, and to pass into a minor work of the committee."

With the women's clubs and the federal bureau thoroughly alive to the possibilities of the baby health movement, the last year has been by far the most profitable of my chairmanship. In November, 1915, Miss Julia Lathrop issued a bulletin, "Baby Week Campaign," stating the purpose in the introduction, as follows:

"The accompanying bulletin, entitled 'Baby Week Campaigns,' has been prepared for the purpose of presenting in

detail such practicable methods of organizing and carrying on a Baby Week as will be of general application and utility in cities, towns and rural communities throughout the country. It has been requested especially by the General Federation of Women's Clubs, which has announced its purpose to promote a nation-wide campaign for the observance of Baby Week."

In the same bulletin Miss Lathrop gives the place our work held in the week's campaign:

"The following suggestions for the organization, equipment and arrangement of a baby health conference of any type held during Baby Week are adopted from methods used in many successful conferences. The pamphlet of the American Medical Association on Baby Health Conferences has been of great assistance in drawing up this outline. Different communities may develop modifications of detail in accordance with local conditions. The Children's Bureau will be glad to receive reports of any important modifications which prove successful."

The bulletin later describes the three acceptable types of conferences, namely, "baby health conference without score card, baby health conference with score card, and baby-improvement contests."

The baby health conference without score cards is the ideal conference, and the one the federal bureau carries out:

"The record sheet used in these conferences gives space for notes on the age, height, weight, previous history, and any physical defects found in a thorough physical examination. It has a page on which the examining physician gives advice to the mother on the general hygiene necessary to better the physical condition of the baby or to keep the baby well. In a conference of this type no attempt is made to compare the development or condition of different babies; the object of the conference is rather to center the attention of the mother on the qualities and needs of her own child; to teach in a practical way the facts with regard to the care of babies and to point out the sources of assistance in making or keeping the baby well. These purposes should be made plain in the publicity material given out."

In a baby health conference with score card "the physical condition of the baby examined is recorded on a score card. For each defect found a certain amount is deducted from the perfect score of 100. When the examination is finished and the score computed, the latter expresses the general physical condition and development of the child. Many successful conferences have been held throughout the country during the past few years according to this method. The American Medical Association has prepared a standard score card which may be obtained for use at baby health conferences. This organization has also prepared a pamphlet giving instructions for organizations wishing to conduct a baby health conference according to this score card, suggestions on the use of the score card to physicians making the examinations, and suggestions upon the computation of the score."

The baby-improvement contest is another form of baby health conference "in which the babies are first examined and scored as in the above conference, and after an interval (one to twelve months) are again examined and scored, and a diploma, medal or prize is given to the babies showing the greatest improvement in score. The following resolutions were adopted by the council on health and public instruction of the American Medical Association, Feb. 24, 1914:

"That if the awarding of any medals or prizes seems judicious in the baby health conferences, they shall be given to the babies showing the greatest improvement in health between the various examinations rather than to the naturally healthy child who scores high at the first examination."

In compliance with these suggestions, our committee has realized the possibility of making our work in the movement yield nation-wide results. The American Medical Association has supplied score cards, anthropometric tables and Pamphlets 5 and 7 wherever desired throughout the United States, besides having the privilege of answering questions or giving advice wherever and whenever requested. The culmination of the preparation for the different baby week campaigns throughout the country has given us the keenest gratification of our three years' service on the committee, because it has made it possible for us to serve in a practical, concrete way the organizations, the women's clubs and the Children's Bureau, which we feel it is our especial function to serve.

From the beginning of this movement, state and county fair associations have been among our strongest cooperative influences. Through their support we have been able to work out many of our theories into practical results. The last year one state fair issued a baby book containing the American Medical Score Card, anthropometric table, list of books on babies, and a complete classification of the babies entering the conference. Ten thousand copies of these baby books were given out as programs to the audiences.

For portions of the country where it is still considered necessary to hold contests, we desire to emphasize the value of the improvement class, in which the subnormal child is given a chance to show development.

Following the examinations at one state fair conference, a questionnaire was sent out to the parents, and a large number of answers received. The questions, together with a few significant replies, follows:

1. What benefit did you expect to derive by entering your baby at the conference?
   1. To find his weak and strong points both physically and mentally and find a means of developing him along most needed lines.
   2. We wanted to know her defects and learn the way to remedy them, also how she would score compared with others her age, in short, how nearly perfect she was.
   3. To learn his condition mentally and physically.
   4. We had the satisfaction of knowing whether the babies were being properly taken care of or not, and how they compared with others.
   5. I wish for professional opinion concerning baby's health, weight, measurements, etc., also to compare him with other healthy babies of his age.

2. Did the benefit meet with your expectations?

Out of fifty-three answers, forty-two were positively "yes," five "No," and six "not entirely."

3. What phase of the examination appealed to you as the most satisfactory, and why?
   1. Every phase of the examination appealed to me as being extremely important.
   2. How to feed my baby properly.
   3. The advice and kindly talk the last doctor gave me.
   4. The psychologic examination, because I wanted to know if my child's mind was properly developed.
   5. The punctuality of appointment for examining. The thoroughness of examination. The interest shown the children and parents.

4. What phase the least satisfactory, and why?
   1. Points being taken off and no explanation.
   2. The child that will "show off" is the one who scores high, while a shy child falls short regardless of how much he knows.
   3. Examination of the throat.
   4. The mental development, because children under 3 years of age vary so greatly.
   5. The mental, because a baby will do things at home that he will not do for strangers.

5. If your child is of correct age will you enter him in the improvement class next year? Why?
   1. Yes, I want to know how much they have improved.
   2. Yes, because I am trying to bring him up to standard.
   3. Yes, to find out the defects as well as improvements.
   4. My boy is over age and being physically perfect, except for a birth mark, there is no chance for improvement.

6. Aside from your own experience what is your opinion concerning the value of measuring and scoring babies?
   1. It is one of the best and most helpful movements that has been undertaken in recent years.
   2. It will make the parents more careful of their condition before a child is born as well as after he is born.
   3. Parents take more interest in their children and try to develop them to exact measurements.
   4. It is a good movement in the right direction, as it induces thoroughness that might otherwise be overlooked.
   5. It will help mothers to raise a better generation of children.

7. Has the measuring and scoring of your baby had, so far, any practical value for you in its care? If so, what?
   1. Yes, in the care of her teeth, also teaching self control.
   2. Yes, that one should devote all thought and time possible to the child, training him both mentally and physically.
   3. Yes, in his diet and more regular feeding.
   4. Suggestions of the examining doctors have been carried out successfully.
   5. Yes, it has given us a keener insight of her physical training.
   6. Yes, the pointing out to us the danger of doing nothing for flat feet and weak ankles. We didn't realize the necessity for orthopedic treatment.

The second edition of Pamphlet 5 having been exhausted during the last year, we seized the opportunity to revise the pamphlet and make it more completely meet the requirements of the baby movement as now developed. The revised copy is now in the hands of the public.

In the second year of my chairmanship we issued an anthropometric table compiled by Mr. F. S. Crum. During the third year we have secured 10,000 score cards and have published a

new anthropometric table compiled by Mr. Crum which is now available. We are at present endeavoring to secure from different sections of the country several thousand score cards on which we wish to base still another table. It is also our intention to tabulate all remediable defects from these cards. If the results are significant, we shall print them and turn them over to the Children's Bureau and to the proper authorities of the states from which they come. We have already received 1,000 cards from one state, and the promise of 1,000 each from several other states. Seven states are planning to issue bulletins in which will be tabulated all facts of statistical value connected with this investigation of remediable defects. May we here urge that other states furnish us with the names of physicians who will be responsible for collecting and sending to us duplicates of score cards secured from contests or conferences in their locality?

During the past year all *orders* for contests and conferences have been filled by Dr. Frederick R. Green, Secretary of the Council on Health and Public Instruction, from the Chicago office. From our own office we have sent *sample* material *only*. The following represents the list of sample copies issued: score cards, 2,557; duplicates, 3,550; anthropometric tables, 504; Pamphlet 5, 555; Pamphlet 7, 608. Practically each of the foregoing samples was accompanied by a letter from our committee.

The Central Committee, which have given us valuable and steady assistance for this year is composed of: Rosa L. Gantt, Spartanburg, S. C.; Samuel Jay Crumbine, Topeka, Kan.; M. Nelson Voldeng, Woodward, Iowa; Grace L. Meigs, Washington, D. C.; Phoebe Van Voast, New York; Margaret V. Clark, Long Beach, Calif., and Frances Sage Bradley, Atlanta, Ga.

The members of the Score Card Committee are: Henry L. K. Shaw, Albany, N. Y.; Velura E. Powell, Red Oak, Iowa; Josephine Baker, New York; Howard Childs Carpenter, Philadelphia, and Lenna L. Meanes, ex-officio, Des Moines, Iowa. This committee is constantly at work revising and perfecting the score card. Dr. Henry L. K. Shaw as chairman of this committee has done much toward establishing the scientific value of this card, and in inspiring confidence in that value.

In conclusion we wish to acknowledge with hearty appreciation the support given us by our Council, the splendid recognition by the Children's Bureau, and the universal cooperation of the women's clubs.

Respectfully submitted.

LENNA L. MEANES, Chairman,
SOPHIE HINZE SCOTT, Secretary.

COMMITTEE ON CANCER

To the Council on Health and Public Instruction:

Your committee as a committee has done very little during the past year, but each individual has done his share in disseminating knowledge as to what can be accomplished when cancer is recognized early. Dr. Bloodgood has been particularly active, and in addition to numerous lectures in the East he has made an extensive tour of the Pacific Coast giving cancer talks to large lay and medical audiences.

Last year your committee reported the publication of several pamphlets, some dealing with the general subject of cancer, others with cancer of individual organs. During the last year we have published Dr. Bloodgood's article on "What Every Woman Should Know About the Breast," and the printer has in hand Dr. Julius Friedenwald's article on "Cancer of the Stomach." We have the manuscripts of several other important papers on cancer. These will be published as the demand increases for more literature on the subject.

Several years ago it was pointed out by Dr. Frederick R. Green and others that there was a great multiplicity of committees and organizations scattered throughout the United States, and that while each was doing its best for the public welfare, there was much overlapping in their labors—much useless labor, in fact—as a result of the lack of coordination. It was pointed out that with concerted action a great deal more could be accomplished with less labor.

When your committee was appointed, the committee of the Congress of the Surgeons of America had been in existence for several years, and the American Society for the Control of Cancer had recently been organized. After mature deliberation it was deemed best to let the American Society for the Control of Cancer take the more active part, as it in a large measure came into being through the efforts of the laity and they have contributed mainly to its support. This society during the year has been establishing state and local committees, and will soon have the country well supplied with local centers from which cancer knowledge will be distributed. It has been the desire on our part to avoid duplication of the work, and this accounts for our apparent inactivity.

The knowledge of the laity concerning cancer is being disseminated more and more each day. Your committee is doing excellent work in an advisary capacity and stands ready at any time to supplement the endeavors of the American Society for the Control of Cancer when it may be necessary. The Council of the American Medical Association has rendered signal service in the publication and dissemination of the various pamphlets on cancer. Just as soon as state and county organizations are fully completed and in action, the cancer reprints will have an ever increasing sphere of usefulness. The outlook in cancer is becoming more and more hopeful.

Respectfully submitted.

THOMAS S. CULLEN, Chairman,
HOWARD C. TAYLOR,
C. JEFF MILLER,
FRANK F. SIMPSON,
JOSEPH C. BLOODGOOD.

COMMITTEE ON CONSERVATION OF VISION

To the Council on Health and Public Instruction:

During the past year, I have kept the *Press Bulletin* supplied with popular eye articles for newspaper use and can only regret that the *Bulletin* is not distributed every week as before, as I believe it is a source of supplying the public with plain health literature, which is much needed.

Our committee and our state managers have had much to do with the enactment of eye legislation in several states. It has also had much to do with the prosecution of a number of individuals (physicians, midwives and others) who have disobeyed the state laws concerning the welfare of eyesight.

Our committee is endeavoring to teach the cheapness of health, but it is difficult to impress the public with this unanswerable truth. It is cheaper to keep people well than to allow them to be sick. It costs five times as much to educate a blind child as it does to educate a seeing child. Sixty-five per cent. of schoolchildren have some eye, ear, nose or throat defect that hinders education. Unprogressive schoolchildren are called "repeaters," that is, they keep repeating their studies. It costs $100,000,000 a year to educate 3,000,000 repeating American children. This is mostly unnecessary, as only about 3 per cent. are really mentally defective. If their physical defects are relieved, all but 3 per cent. will become average scholars. This would be a great boon to themselves, their parents, their teachers and their community. Over half of the criminals are poorly educated, and apparently mentally defective. It is probable that if their physical defects had been corrected in early childhood so that the easy acquirement of an education had been possible, most of them would never have become criminals at all, they would have been happier, and enormous sums of money would have been deflected into worthier channels. In such a reform, the eyes play an important part, for 87 per cent. of our knowledge comes to us through our eyes; hence the supreme importance of good eyes for schoolchildren.

Preventive eye work is very cheap, but its results are big. To drop silver nitrate into all new babies' eyes cost 2 cents per baby, but think of the misery and money it saves! It would remove 25 per cent. of the inmates of our blind asylums. There are now 300,000 dependent blind in America costing $15,000,000 a year to support. The wearing of goggles

in shops, and the use of protectives for dangerous machinery would cost but little, and would almost entirely prevent injury to eyes in shops. Control over the manufacture and sale of wood alcohol, in its various seductive forms, would save many eyes and many lives, and would cost practically nothing. Five hundred dollars a year, and the cooperation of teachers of a city the size of Chicago, would enormously improve the eye, ear, nose and throat conditions of the schoolchildren of that city, and would make teaching much easier, and much less expensive. The teachers can make health surveys easily and efficiently if they will. Plain instructions are printed, and there is no excuse for not doing it. No medical education is necessary, and the little time devoted to the work would be amply repaid by the added ease and comfort of the teachers' work, as stupid children are made bright by treatment, operations, glasses, etc.

No.	State	Manager	Number of Lectures	Number of Lecturers	Number of Cities	Size of Audiences
1	Illinois	P. Guilford	9	5	9	3,300
2	Wisconsin	N. M. Black	6	4	4	800
3	Missouri	C. Loeb	7	6	3	1,000[1]
4	New Hampshire	C. H. Babbitt	3	3	3	300[2]
5	Tennessee	E. C. Ellett	4	3	3	900[3]
6	Georgia	R. P. Cox	55	12	50	7,500[4]
7	Massachusetts	W. B. Lancaster	1	1	1	80
8	Michigan	W. R. Parker	4	4	4	1,300
9	Dist. Columbia	O. Wilkinson	2	1	1	100
10	Idaho	R. L. Nourse	5	1	1	800
11	Nevada	H. A. Brown	4	1	4	700
12	Ohio	G. C. Schaeffer	98	11	34	26,400[5]
13	Arkansas	H. Moulton	11	5	9	2,000[6]
14	New York	Lewis and Alger	100	25	100	27,000[7]
15	South Dakota	J. G. Parsons	13	3	10	3,000[8]
16	Maryland	J. J. Carroll	1	1	1	300
17	New Jersey	C. F. Adams	9	4	3	2,000
18	Kentucky	J. A. Stucky	42	2	18	7,000
19	Virginia	J. A. White	1	1	1	200
20	Oklahoma	E. F. Davis	3	1	3	1,500
21	Alabama	S. L. Ledbetter	6	4	5	700[9]
	Total		384	81	267	84,900

It will thus be seen that during the past year lectures have been delivered in 21 states. Three hundred and eighty-four lectures have been delivered by 81 lecturers, in 267 cities to audiences estimated at 84,900 people. In the two previous years of the existence of this committee, 829 lectures were delivered to 183,325 people. If we add to these figures the work of the past year, it will be seen that 1,213 lectures have been delivered to 268,223 people.

1. A local committee for the prevention of blindness has been formed at St. Charles, Mo., under the influence of our National Committee.
2. Through the influence of our National Committee much work was done on ocular salvation by lecturers who talked throughout the state, during Baby Week.
3. Through our Committee, the Nashville Board of Education adopted the eye, ear, nose and throat examination of schoolchildren.
4. Through our Committee, many cities have adopted the examination of schoolchildren's eyes, ears, noses and throats.
5. Mostly accomplished by workers of the Ohio Commission for the Blind.
6. Survey of eyes, ears, noses and throats of schoolchildren commenced in Pine Bluff.
7. Given largely under the auspices of the New York State Committee for the Prevention of Blindness, the New York Association for the Blind, the National Committee for the Prevention of Blindness, etc.
8. Eye, ear, nose and throat inspection inaugurated in Mitchell, Aberdeen and Watertown. Dr. Parsons has organized a most successful society called the School Hygiene Association. It has a membership of 200.
9. Montgomery and Cloverdale County have begun the annual and systematic examination of schoolchildren's eyes, ears, noses and throats. A law is being introduced in the Alabama legislature for the examination of schoolchildren's eyes, ears, noses and throats.

Our committee is endeavoring to inspire the different states with the necessity for state activity along the lines of visual conservation. The most efficient manner of doing this is by means of lectures in the different towns and cities. These are arranged by the several state managers, whose duty it is to bring competent lecturers and receptive audiences together. This is frequently very difficult work, and the state managers deserve much credit for their devoted and unselfish labor. Many circumstances have conspired to make this rather a poor season for this work, and yet creditable work has been accomplished. I give here an incomplete account of the past season's lectures, and desire to say that the suddenness of the call for this report renders it impossible for me to give a full report of the lecture season.

Our committee has this season undertaken a most arduous but useful work, namely, the compilation of all the eye laws of the United States. It is astonishing how ignorant almost every one is concerning the laws of their own states. For instance, how many people in Idaho or New Jersey or Virginia could tell whether any law existed in their own state concerning trachoma or wood alcohol or schoolchildren's eyes; and still further, how many could tell what that law was, if any existed? It is to obviate just this ignorance that the committee is compiling the various eye laws. Even when such laws are on the statute books they are difficult to find. When this work is completed it will enable any one to tell at a glance if any law on any eye subject exists in any state, and if so just what is the reading of the law. The articles are appearing quarterly in *Ophthalmology*, and when completed, will be published by THE JOURNAL in book form as a work of reference. The titles of the articles are as follows:

1. State Legislation Concerning Schoolchildrens' Eyes, Ears, Noses and Throats.
2. State Legislation Concerning Ophthalmia Neonatorum.
3. State Legislation Concerning Trachoma.
4. State Legislation Concerning Wood Alcohol.
5. State Legislation Concerning Shop Accidents and Shop Conditions Affecting the Eye.
6. State Legislation Concerning Optometry.
7. State Legislation Concerning the Blind.
8. Model Eye Laws for State Legislation.

The first three of these articles have already appeared, and the others will follow in each issue of *Ophthalmology*. The work of collecting this material has been very arduous; each article represents about 500 letters sent out from my office.

In closing my report I wish to say that our work would be much increased if the Council could furnish us with even a little more money than is at present allowed. We need more stereopticon pictures and more pamphlets for liberal distribution. We need short leaflets for wide distribution, in several languages, on "Babies' Sore Eyes," "Shop Accidents," "Factory Conditions Favoring Eye Salvation," "Wood Alcohol," etc. The work of this committee should include conservation of hearing as well as the conservation of vision. These and other things we need to advance in our work, and unless such steps are taken, our committee will languish and eventually die of starvation. I earnestly recommend that these matters be taken into earnest consideration.

Respectfully submitted.

FRANK ALLPORT, Chairman.

REPORT OF COMMITTEE ON COOPERATION WITH THE NATIONAL EDUCATION ASSOCIATION

To the Council on Health and Public Instruction:

For four years the American Medical Association and the National Education Association have made special appropriations for the purpose of studying the hygienic and sanitary conditions of schools.

It was early ascertained that the country school was sanitarily and hygienically behind the city school, and that the city school was steadily improving while the country school was at a standstill. This has been stated in former reports of the committees. Last year, 750,000 copies of the report were printed by the American Medical Association press, the expenses were paid by the Elizabeth McCormick Memorial Fund, and the reports were circulated by the U. S. Bureau of Education.

This year's report of the committee, compiled by Thomas D. Wood, M.D., chairman of the National Education Committee, is now ready for the printer. It is far more comprehensive and important than any former report. It will be seen by the report that the work of the committees has just commenced. The methods suggested for improving conditions are simple, scientific and practical, but patient and careful supervision will be indispensable. It is sincerely hoped that the work so favorably launched may be continued until satisfactory results have been obtained in the rural schools throughout the land.

At the annual committee meeting in Detroit, the members present authorized for the work of the committee:

First, the printing of a small introductory edition of a second report (of twenty-four pages) of our committee on "The Health Care of Rural Schoolchildren."

Second, the reproduction of our committee charts in a pamphlet edition, to be distributed as effectively as may be and, if possible, through the Bureau of Education.

Third, the reproduction in actual size of an edition of 100 copies each of all or some of these charts, to meet the demands which we are receiving in considerable and increasing numbers for these charts. The plan is to lend some sets of these charts in answer to requests for them, and to sell the sets or individual charts at cost in response to requests that may be received. It seems desirable that the committee should have sets of these charts to lend to state and county fairs and to other exhibitions attended particularly by people from rural regions.

Fourth, to undertake (when there may be sufficient funds made available for this purpose) under the auspices and supervision of the committee, a national investigation (in from ten to fifteen states) of the health and welfare of teachers.

The principal obstacle in the way of further development of the committee's activities is lack of sufficient funds to finance the printing of a large edition of the second report, the reproduction of the charts for use in public health and educational exhibits, and the expenses of the nation-wide investigation of the health and welfare of teachers with the publication of a third pamphlet containing the results of this investigation. This committee for its important work should have at least $5,000 a year for the next three years. Unfortunately the resources of neither the American Medical Association nor the National Education Association will permit of such an appropriation. It must therefore be found through the assistance and cooperation of other bodies or through the broad spirited philanthropy of some individual citizen.

Respectfully submitted.

R. W. CORWIN, Chairman.

Dr. Ennion Williams, Virginia, asked permission to present a statement bearing on the Report of the Council on Health and Public Instruction just read and have it referred to the Reference Committee on Legislation and Political Action.

Dr. A. R. Mitchell, Nebraska, moved that Dr. Williams be permitted to present the report by title and that it be referred to the Reference Committee on Legislaion and Political Action.

Seconded and carried.

Report of the Council on Medical Education

Dr. Arthur Dean Bevan, Illinois, Chairman, presented the report of the Council on Medical Education, which was referred to the Reference Committee on Medical Education.

The report follows:

To the Members of the House of Delegates of the American Medical Association:

Each year since 1905, the report to this body has shown a continued progress in medical education. The large oversupply of medical colleges has given way to a more normal supply of greatly improved institutions. The fact that such progress has been possible in a brief twelve years reveals how serious had become, up to that time, the conditions underlying medical education.

In the thirty years following the Civil War, the number of medical colleges in the United States was rapidly increased, until in 1904 this country had over half of the world's supply. Only a few of these institutions were well conducted; the majority were owned by individuals or joint stock corporations and conducted for profit. In order to increase the profits, all methods were resorted to in the effort to attract students. The enrolment in the medical colleges of the United States in 1904, therefore, was much larger than normal conditions would have brought.

During the same thirty-year period, however, forces were being developed which would eventually demand an entirely different type of medical teaching institution. It was during this period that medicine was placed on a scientific basis through the developments in pathology, bacteriology, physiology, physiologic chemistry and pharmacology. These developments have revolutionized the study of medicine; they have made necessary a thorough preparation in the fundamental sciences and a longer and better correlated medical course. As a result, the practice of medicine hereafter will be by men more thoroughly trained in the medical sciences.

When the practice of medicine throughout the country is entirely on this scientific basis, the public will soon become familiar with the possibilities of modern medicine, and this, in turn, will eliminate once for all the dogmas and cults which have been and are doing so much harm. This is the problem of the organized medical profession, and the American Medical Association is attacking it through the Council on Pharmacy and Chemistry, the Council on Medical Education and the Council on Health and Public Instruction. The medical profession must clean its own house and get rid by education and propaganda of the ignorant, poorly qualified men in its own ranks as the first step toward placing the practice of medicine on a thoroughly sound, scientific basis. It is pleasing to report that great progress is being made.

THE CAMPAIGN FOR IMPROVEMENT

In 1905, conditions were ripe for the campaign which the Council on Medical Education has since been conducting, with the results of which you are already familiar. The results after eleven years of this campaign are shown in Table 1. Although the oversupply of medical schools has been reduced by about 40 per cent., the number of higher standard colleges has been increased by over 80 per cent. The figures in regard to medical students and graduates show an improvement in quality as compared with quantity in about the same proportions.

TABLE 1.—QUALITY VERSUS QUANTITY

THIS TABLE SHOWS THAT, ALTHOUGH THE TOTALS OF COLLEGES, STUDENTS AND GRADUATES HAVE BEEN DECREASED IN ELEVEN YEARS, THE NUMBERS OF HIGH STANDARD COLLEGES, BETTER EDUCATED STUDENTS AND BETTER TRAINED GRADUATES HAVE BEEN INCREASED

	1904	1915
Medical Colleges:		
Totals of medical colleges	162	95
Totals having higher entrance standards	4	83
Percentages having higher requirements	2.5	87.4
Medical Students:		
Totals in all colleges	28,142	14,891
Totals in high standard colleges	1,761	11,912
Percentages in high standard colleges	6.3	80.0
Medical Graduates:		
Totals from all colleges	5,747	3,536
Totals from high standard colleges	369	2,652
Percentages from high standard colleges	6.4	75.0

Notable improvements have been brought about through the Medical Students' Register, which was established in accordance with the action taken by the House of Delegates in 1910. Through the facts shown by this register and the information obtained by inspections, the conditions in all medical schools, regarding the administration of entrance requirements, methods of teaching, facilities, etc., are now well known. Practically all that was known prior to the organization of the Council was that standards were seriously low and that conditions were generally bad.

Although the number of medical colleges has been greatly reduced, there is still no dearth in the supply of colleges. Statistics show that fifty or sixty medical colleges could easily have cared for all students enrolled in the ninety-five which held sessions last year, without the expenditure of another dollar for teachers or equipment.

The number of medical colleges will doubtless be further reduced, but statistics show that the lowest ebb in the attendance of medical students has perhaps already been reached. Reports received from the ninety-five medical colleges now holding sessions show an increase over last year in the enrolment of freshman students. This is especially true in the colleges which put the higher admission requirement into effect two or more years ago. It is quite evident, therefore, that after a few years have been allowed for readjustment

under the higher entrance standards, the enrolments of students will become normal.

THE "IDEAL" AND THE AMERICAN STANDARD

During the last twelve years the Council has endeavored to secure the general adoption of the standard referred to as the "ideal" standard, in our report to the House of Delegates in 1904. That standard was as follows:

(*a*) A four-year high school course;
(*b*) A year devoted to college courses in physics, chemistry and biology;
(*c*) A four-year medical course, and
(*d*) A year as an intern in a hospital.

The general adoption of this standard has been secured, so far as the year of physics, chemistry and biology and a four-year medical course are concerned. It has been adopted by eighty-five of the ninety-five medical schools in this country. As to the hospital intern year, a large majority of the medical school graduates voluntarily secure such work before beginning independent practice.

THE AMERICAN STANDARD OF MEDICAL EDUCATION

As a result of the influence of colleges and universities, the ideal standard urged by the Council has been somewhat modified. Educators generally advocated two years of premedical college preparation instead of one, and the medical schools gradually accepted that standard, so that at present fifty-four of the ninety-five medical colleges now require for admission two years of college work. It is evident also that the twenty schools which will survive out of the remaining forty will likewise adopt this requirement, and that standard of preliminary education has been adopted by fifteen state licensing boards. It is evident, therefore, that the American standard of medical education that is today most widely accepted and which in the near future will be legally required in every state of the Union is as follows:

(*a*) After a four-year high school course,
(*b*) Two years of collegiate work, including courses in physics, chemistry, biology and a modern language;
(*c*) A four-year medical course, and
(*d*) A year as an intern in a hospital.

It can be confidently predicted that such a standard will be the legal requirement in this country by 1920. The remaining steps that must be taken to bring this about are few and simple. The state licensing boards will doubtless eliminate about twenty schools that are still a menace to sound medical education and efficient medical practice. This will reduce the number of schools to about seventy, all of which will adopt acceptable requirements. The state boards throughout the country should require the completion of a hospital internship before a condidate is admitted to the examination for medical licensure. A study of the hospital year problem shows that the best solution is simply to insist on a hospital year as a necessary part of a medical training, and to urge the medical licensing board in each state to make it a legal requirement. When these requirements are adopted by all states, American medical education will be on as high a basis as that of any other country in the world.

The hospital internship has been developed in such a way that it affords a most valuable training. This is in marked contrast with the required hospital year in Germany, where the intern is elbowed out by the permanent assistants and given little work and little training. The hospital internship in this country is also more satisfactory than the plan of house physicians and surgeons in England which, as a rule, are appointments of only six months and open to a small proportion of graduates.

The inspecting and classifying of the hospitals of the country is an important matter, especially in connection with the value of an internship served in them. The Council has this work in hand. It has been progressing slowly because we have not had sufficient funds to carry on the work properly. The trustees of the American Medical Association have been requested to provide the funds necessary to prosecute the work more rapidly. In the meantime the Carnegie Foundation has given the American College of Surgeons $10,000 a year for three years to be devoted to hospital inspection. The Council will cooperate in every way possible to make this hospital inspection thorough and fruitful.

MORE MEDICAL COLLEGE MERGERS NEEDED

The developing of satisfactory medical education in this country has been hindered by the fact that in some of our important centers instead of one strong medical school there are several which have different standards and conflicting interests. In most of the centers of medical education in Europe there is in each but one medical school, which receives the undivided support of the people, the profession, and as a rule the government. Such a situation has many advantages. There are in this country eleven states with no medical schools, twenty-one with but a single medical school and seventeen with two or more schools. There are twelve cities having two or more separate schools.

It would be desirable, therefore, to have in each medical center either one medical school, as exists in Berlin, Paris or Vienna, or a close affiliation of the existing medical schools. Would it not be possible to establish in each medical center a single, strong medical teaching institution with all the advantages that a well organized arrangement brings with it? In the smaller medical centers with a quota of not to exceed from 400 to 500 students and where existing conditions permitted, a medical school with a single teaching unit, with single departments of anatomy, pathology, medicine, etc., would suffice. In large centers with from 1,000 to 2,000 medical students, however, several teaching units would be needed, each with its separate laboratories of anatomy, pathology, etc., and a number of medical and surgical clinics, since in a single laboratory of anatomy, for example, or in a single clinic, 1,000 or more students could not be properly taught. Where there are now two or more universities with well established medical departments, a cooperative plan might be devised by which they could work in harmony and the several medical departments be made individual teaching units. This would insure uniform requirements and advantages which could be obtained without interference with established university organizations, and much confusion and expense might be saved by a common administration. They could with proper conditions exchange credits, municipal hospitals could be better utilized, endowments could be more easily secured, and postgraduate work could be better organized.

It should be no more difficult to get several medical schools to cooperate in this way than to get a number of railroads to cooperate in a great union depot plan or to get a number of steel plants to form a steel trust. It will require breadth of view, hard work and organizing ability, but the end sought is worth all the hard work necessary to accomplish it, and some such plan is necessary to bring about the best result in American medical education.

IMPROVED STANDARDS OF LICENSURE

As shown in Table 2, there are now thirty-two states which have adopted one or two years of college work as a minimum standard of preliminary education for those who seek the license to practice medicine in those states. The table shows not only the number of years of premedical college work required by each state, but also the sessions in which students matriculating in medical colleges are affected by the increased requirement and the year in and after which it applies to all graduates. A remarkable progress has been made in state board requirements since 1908, prior to which no state was requiring more than a four-year high school education as the minimum standard of preliminary education. As will be noted, there are now thirty-three states which have adopted the higher standard, fifteen of which require as a minimum *two years* of premedical college work. In three states, Arizona, Maryland and Washington, the medical practice acts specify that the educational requirements for the applicant who seeks the license to practice in those states are to be the same as those held by the Association of American Medical Colleges in the year he graduated. The requirements in those states, therefore, are changed automatically with changes adopted by that association, which adopted the standards of one year of college work and two years of college work to take effect for all

matriculants respectively in 1914 and 1918. The standards apply to all *graduates*, therefore, respectively in 1918 and 1922.

The advances in standards of licensure since 1904 are further shown in Table 3. The most marked increase is in regard to the requirement of collegiate work, already referred to. The next greatest increase (twenty-nine) is in the number of states—thirty-three—which are now refusing to recognize low standard colleges.

CHARTERING OF EDUCATIONAL INSTITUTIONS

As a result of a special investigation, it is found that only ten states have provided any control over the chartering of educational institutions, and in two of these the restrictions

TABLE 2.—STATE REQUIREMENTS OF HIGHER PRELIMINARY EDUCATION

There are now thirty-two states which have adopted requirements of preliminary education in addition to a standard four-year high school education. These states, the number of college years required and the time the higher requirements became effective are as follows:

State Examining Board of	Number of Years Required	Affects Students Matriculating	Affects All Graduates
Requiring Two Years:			
Alabama	2	1915-16	1919
Arizona	2	1918-19	1922
Colorado	2	1910-11	1914
Indiana	2	1911-12	1915
Iowa	2	1911-12	1915
Maryland	2	1918-19	1922
Minnesota	2	1908-09	1912
New Hampshire	2	1915-16	1919
New Jersey	2	1917-18	1921
North Dakota	2	1908-09	1912
Oklahoma	2	1917-18	1921
South Dakota	2	1911-12	1915
Virginia	2	1917-18	1921
Washington	2	1918-19	1922
Wisconsin	2	1915-16	1919
Requiring One Year:			
Arizona*	1	1914-15	1918
Arkansas	1	1915-16	1919
California	1	1915-16	1919
Connecticut	1	1910-11	1914
Illinois	1	1915-16	1919
Indiana*	1	1910-11	1914
Kansas	1	1910-11	1914
Kentucky	1	1914-15	1918
Louisiana	1	1915-16	1919
Maryland*	1	1914-15	1918
Michigan	1	1914-15	1918
Mississippi	1	1915-16	1919
New Hampshire*	1	1914-15	1918
New Jersey*	1	1916-17	1920
North Carolina	1	1914-15	1918
Oklahoma*	1	1914-15	1918
Pennsylvania	1	1914-15	1918
Rhode Island	1	1914-15	1918
Tennessee	1	1915-16	1919
Texas	1	1914-15	1918
Utah	1	1913-14	1917
Vermont	1	1913-14	1917
Virginia*	1	1914-15	1918
Washington*	1	1914-15	1918
West Virginia	1	1917-18	1921

* The 2-year requirement also adopted; effective later.

do not apply to irregular professional schools or correspondence colleges. In thirty-eight states, therefore, it appears that any coterie of men, by paying an insignificantly small fee, can obtain permission to open an institution with the avowed purpose of granting degrees, no questions being asked as to whether the institution is properly equipped or has sufficiently qualified teachers to furnish the education usually demanded before such degrees are granted. After they are organized, such institutions are usually responsible to no one, and are free to make use of questionable practices even to the actual barter in degrees and certificates. Even after they are exposed, no legal machinery has been provided for revoking their charters or punishing the impostors. As a rule the fees charged by such institutions are far in excess of the tuition charged by some of the best teaching institutions in the land.

NEW FORM OF QUACKERY

Through the lack of an adequate check on the chartering or conduct of such institutions, a new and popular form of quackery has been established, which provides the easiest present-day method of evading the educational requirements of the medical practice laws. "Colleges" and "schools" professing to turn out in a few brief weeks or months, by correspondence methods or otherwise, specialists in some branch related to medicine have been springing up in various states. Briefly, the conditions have become so bad as to cause unnecessary but serious demoralization in the field of medical education, in the licensing of physicians and in the practice of the healing art. The existence of such unregulated, unstandardized institutions is radically unfair to the ambitious students who have been beguiled into them; it has led to the development of an organized attempt to destroy or evade laws passed in the interest of the public and, worst of all, it is a serious menace to the public, since it is sweeping into the practice of the healing art large numbers of those who are insufficiently trained to assume responsibility for the care of the sick.

LARGEST NUMBER IN ILLINOIS

The largest number of these institutions at present is found in Illinois, where conditions are especially favorable. Besides the Class C medical schools which continue to exist, there are in Illinois colleges of osteopathy, chiropractic, chiropody, naprapathy, somopathy, physcultopathy, refraction, optics and a legion of others, most of which have for their chief inducement elegantly printed diplomas conferring the degree of "doctor" of this, that or the other. The courses offered for such degrees are in some instances so notably a makeshift as to be ridiculous, and an insult to education. Some are offering courses under two or more titles, and others appear to be doing a retail business in dispensing degrees in all the "forms" or "systems" of healing which may have been or ever shall be enumerated.

In Iowa several so-called chiropractic institutions have been chartered, which are reported to be without adequate equipment, and, with low entrance requirements, are turning out, by correspondence courses or other loose methods, relays of followers of that particular "school." Although "made in Iowa," these graduates are not permitted legally to practice in Iowa, but are turned into other states where adequate legal barriers have not been established against them. Such

TABLE 3.—ADVANCES IN STATE LICENSURE REQUIREMENTS IN TWELVE YEARS

Requirement or Provision	States Having Provision for			States Still Having No Provision for
	1904	1916	Increase	
Preliminary Education:				
Any requirement	20	45	25	4
A standard four-year high school education or higher	10	39	29	10
One or two years of college work as a minimum	0	32	32	17
That all applicants be graduates of a medical college	36	48	12	1
That all applicants undergo an examination for license	45	48	3	1
Requirement of practical tests in the license examinations	1	7	6	42
Full authority by board to refuse recognition to low-grade colleges	14	34	20	15
Boards refusing to recognize low-grade colleges*	5	34	29	15
Reciprocal relations with other states	27	40	13	9
Single boards of medical examiners	36	42	6	7

* In three states, Arkansas, Connecticut and Florida, each of which has three separate boards, only the regular (nonsectarian) boards have refused recognition to low standard medical colleges.

institutions are found also in California, Massachusetts, Michigan, Minnesota, Missouri, Oklahoma and Pennsylvania.

In the interests of the public there should be provided in every state some competent board or authority to have in charge not only the chartering of all educational institutions, but also the right to revoke the charter and close the doors of every institution which is not being conducted in an honorable manner and for a proper purpose.

The eleven states which thus far have provided any means by which the charter of educational institutions may be guaranteed are: Arkansas, Indiana, Maine, Maryland, Massachusetts, Nebraska, New Jersey, New York, North Carolina, Ohio and Pennsylvania.

New York at present appears to have the most complete control of educational institutions. In Maine, Massachusetts and North Carolina a special act of the legislature is necessary before an educational institution can obtain legal authority to grant degrees. In Arkansas, Indiana, Maryland, New York, Ohio and Pennsylvania the charter must be obtained, directly or indirectly, through the state board, or department of education, or through a committee (Pennsylvania) closely connected with that department. In Nebraska, application must be made to the judge of the district court, whose duty is to appoint one or more commissioners to investigate and vouch for the claims of the applicant. Even in some of these states the authority has apparently been made to cover only so-called academic colleges and universities. It is clear that such authority should be extended to include all institutions professing to give instruction in any subject, especially those bearing the name of "school," "academy," "college," "university" or the like, and also all institutions granting degrees of whatever kind. The menace from such irresponsible, professedly "educational" institutions is much greater than is generally understood.

Relations with Canada

The professional relations between Canada and the United States have always been most cordial. For several years the medical schools of Canada have been regularly furnishing reports to the Council on Medical Education for publication with the statistics appearing annually in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. It is with surprise and with regret, therefore, that a discrimination against even the best medical colleges in the United States has been established in two provinces of Canada—Quebec and Ontario. Graduates from even the highest grade medical schools in this country in order to secure licenses in the two provinces named are required to have taken an additional year's work in one of the medical schools of those provinces. No objection could be raised if only graduates of some of the lower grade medical schools in the United States were thus debarred, but official information obtained makes it clear that no exceptions are made to the rule even for graduates of the medical schools of Johns Hopkins University, Leland Stanford Junior University, Cornell, Columbia, Western Reserve and other universities which require two, three or four years of collegiate work for admission to their medical departments, including not only thorough courses in physics, chemistry and biology but also a "reading knowledge" of French or German, or both, and the completion of other collegiate subjects. This Canadian attitude is more arbitrary than that by the Conjoint Board of London, which recognizes the premedical college courses in physics, chemistry and biology if taken in a recognized college, and which admits to its final examinations graduates of twenty or more medical colleges of the United States.

In Canada the student, after three years in high school, registers for a five-year course in the medical school, the first year of which is devoted largely to the premedical sciences, physics, chemistry and biology. In the United States at present, in fifty medical schools, in addition to a four-year high school course, the student is required to complete *two years* of work in a standard liberal arts college, which work must have included the premedical sciences, physics, chemistry and biology, before he is admitted to the medical school. For admission to thirty-five other medical colleges, one year of liberal arts college work beyond the four-year high school course is required, and this college year also must include courses in physics, chemistry and biology. All the medical colleges in the United States, therefore, require, so far as time is concerned, *one* more year of high school work than is required in Canada; and fifty of the medical colleges of the United States require *two more* years of high school and college work than are required in Canada. The courses in physics, chemistry and biology in both Canada and the United States are taught by university or college professors of those sciences, and not by teachers of medical subjects. It is fair to assume, therefore, that the science courses in both countries are taught with equal thoroughness. Such advantages as there may be would seem to be with the medical schools in the United States because of the additional training and the greater maturity of the students.

Different Grades of Medical Colleges

Along with the inspections of the medical colleges in the United States which have been made by the Council on Medical Education, two complete tours of inspections were made of the medical colleges in Canada, the second having been completed during the college session of 1913-1914. Those inspections revealed the fact that Canada, like the United States, has several grades of medical schools.[1] As already stated, not one of the medical schools of Canada requires for admission more than a high school education, represented by the completion of the eleventh grade. One or two of the schools in the provinces of Quebec and Ontario require in addition the passing of an examination referred to as the "junior matriculation."

American Medical Schools Greatly Improved

It will be seen from the foregoing statements that conditions in education in the two countries are quite parallel, except that entrance standards are now higher in the United States by one or two years. During the remarkable reorganization that has been going on in this country since the beginning of the Council's work, conditions in the United States have been extensively improved. There are now in the United States thirty or forty medical schools which will compare favorably with the medical schools of any other country. During this development of medical education in the United States, American schools have been careful to avoid the weakness of both English and German systems of medical education and, under able supervision, have established thorough and complete courses of medical education.

Considering all these things, therefore, it is hoped that our good friends in the medical profession of Quebec and Ontario will have their license laws so amended as to correct this unfair discrimination against the high grade medical colleges of the United States. Evidences of efforts in this direction have already been received which, it is hoped, will be successful.

Reciprocal Relations with Other Countries

This calls attention to the fact that the time has arrived when a more careful discrimination should be used by the licensing boards of this country in the acceptance of credentials from foreign medical schools and in the licensing of graduates from such institutions. There is certainly no reason why the states should keep a wide-open door for the heterogeneous stream of graduates from the medical schools of other countries, especially from those which do not show a disposition to return the courtesy. Then there is also the question of providing for reciprocal relations with other countries in the recognition of the graduates of high grade medical schools.

The National Board of Medical Examiners

As is doubtless well known to the members of this body, for fourteen years or more there has been talk of a national board of medical examiners. The confusion resulting from the fact that the licensing of physicians in this country rests with fifty individual licensing boards has emphasized the need for some national qualification which would be worthy of recognition by all states. It was seen that no national body with legal powers could be established without first securing an amendment to the national constitution. It was, therefore, quite evident that the board to have this matter in charge would need to be a voluntary organization and that its certificate, to be of value, would need to be based on unquestionable qualifications.

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1. The classification of Canadian medical colleges is as follows:
Class A: University of Toronto, Faculty of Medicine, Toronto, Ont.; McGill University, Faculty of Medicine, Montreal, Que.
Class B: Dalhousie University, Faculty of Medicine, Halifax, N. S.; Montreal School of Medicine and Surgery, Montreal, Que.; Laval University, Faculty of Medicine, Quebec, Que.; University of Manitoba, Manitoba Medical College, Winnipeg, Man.
Class C: Queen's University, Faculty of Medicine, Kingston, Ont.; Western University, Faculty of Medicine, London, Ont.
The University of Alberta at Edmonton, besides the premedical year, gives only the first two years of the medical course as measured by that of the medical schools of the United States. This college was not inspected.

This matter was brought into prominence a year ago when President Rodman, in his address, stated that such a board had been organized. So little was known at that time in regard to the details of the organization, however, that this portion of the President's address was referred to the Council on Medical Education for further information. The following report was adopted last year by the House of Delegates:

The scope of the address was very comprehensive and instructive. That portion which calls for the action of your committee, namely, the advisability of establishing a board of national examiners, contains material worthy of further consideration of the House of Delegates, and it is recommended that it be referred to the Council on Medical Education.

In accordance with these instructions, the Council on Medical Education held a business meeting in Washington, Nov. 27, 1915, the object of which was to examine into the organization, personnel and methods of the National Board of Medical Examiners. The executive committee of the national board as then organized, on invitation, was present.

It was learned that the completion of the organization of this board in so comparatively short a space of time was due to the fact that funds sufficient to allow the organization to be completed and to pay the running expenses for several years were generously donated by the Carnegie Foundation for the Advancement of Teaching. This information was obtained by Dr. Rodman only a few months prior to the giving of his annual address, and since the national board had been for so many years a matter in which he was personally interested, it was but natural that he desired to have the matter announced in his presidential address to the American Medical Association.

The Council was favorably impressed with the personnel of the membership of this board, which was as follows: Admiral W. C. Braisted, Surgeon-General, U. S. Navy, president; Commander E. R. Stitt, U. S. Navy; Gen. W. C. Gorgas, representing the U. S. Army; Col. L. A. LaGarde, treasurer, representing the U. S. Army; Surg.-Gen. Rupert Blue, representing the Public Health Service; Asst. Surg.-Gen. W. C. Rucker, representing the Public Health Service; Herbert Harlan, representing the Federation of State Medical Boards; Isadore Dyer, New Orleans; Victor C. Vaughan, Ann Arbor, Mich.; Henry Sewell, Denver; Louis B. Wilson, Rochester, Minn.; E. Wyllys Andrews, Chicago; Horace D. Arnold, Boston; Austin Flint, Jr., New York, and William L. Rodman, secretary, Philadelphia.

As a result of its business meeting, although the Council was in favor of the general scheme of a national board of medical examiners, nevertheless, it felt that further investigation was necessary before it could actually endorse the board as organized. Plans were completed at the Washington meeting for the symposium on the subject which was held at the twelfth annual conference in Chicago, Feb. 7, 1916. The Council also accepted the invitation to have a delegate present at a business meeting of the board which was to be held in Washington, November 29, just following the Council's meeting. At that meeting the Council was represented by its secretary and by Dr. H. D. Arnold, who as may be noted, is also a member of the national board.

The discussions at the board's business meeting favorably impressed the Council's representatives. It was seen that the members were determined to have the affairs of the board conducted in a manner above question. Instead of the original plan to have representatives on the board from certain organizations of physicians, it was decided to have six representatives from the government medical services, two each from the United States Army, Navy and Public Health Services; three members from the state licensing boards, chosen through their national organization, the Federation of State Medical Boards, and six other physicians to be appointed at large.

The surgeons-general of the Army, Navy and Public Health Services are to serve as long as they hold their respective offices. All other members were by lot divided into groups of four, their terms being two, four and six years, so that the term of office of four would expire every two years, and their successors would be appointed for a term of six years.

Another fact which was learned at the meeting of the board was that the qualifications of physicians admitted to the examinations were to be properly safeguarded. The discussions indicated also that the examinations were to be thorough and comprehensive. Although the investigation thus far had already produced favorable impressions in regard to the personnel of the board; its manner of perpetuation; its representation; the safeguarding of the applicant's qualifications, and the character of the examination, nevertheless, it was determined to make no expression of approval until after the symposium on the subject should be given in February, where there would be opportunity for a full discussion of the problem from every point of view.

The members of the House of Delegates who were in attendance at the February conference know how thoroughly the subject was discussed and how satisfactorily all criticisms of the board were answered. The last criticism which the Council might have made against the proposition was corrected by the announcement from the secretary of the board that it had been voted to require as a minimum standard of preliminary education two years of collegiate work in addition to a four-year high school education. This was important, since otherwise at the very beginning the board's certificate could not have been recognized in ten states, owing to the fact that that standard of preliminary education had been adopted in those states. In regard to the organization of this board, the facts are set forth in more detail in the constitution and by-laws, which are as follows:

THE NATIONAL BOARD OF MEDICAL EXAMINERS FOR THE UNITED STATES

PREAMBLE

The need of a standard licensing body for the whole of the United States and territories tributary has occasioned the organization of a voluntary board of examiners, selected from the Medical Corps of the Army and Navy and the Public Health Service, with the other members selected from the Federation of State Examining Boards and the medical profession of the United States. That the creation of this board may be certain and its continuance assured, it is proposed that it shall be governed by the following constitution and by-laws as set forth:

CONSTITUTION

I. *Name or Title.*—The name of this body shall be the NATIONAL BOARD OF MEDICAL EXAMINERS FOR THE UNITED STATES.

II. *Official Domicile.*—The domicile of this board shall be in Washington, District of Columbia.

III. *Objects.*—The objects of this board are (*a*) the establishment of a standard of examination and certification of graduates in medicine, through which the recipient may be recognized for the licensure in the practice of medicine in the United States, territories, and extraterritorial possessions on presentation of the proper credentials of this board.

(*b*) A cooperation with the Board of Medical Examiners in individual states, territories and extraterritorial possessions of the United States by which licensure may be effected through registration of the credentials of this board.

(*c*) A consistent high purpose of determining the qualifications of the candidate before this board so as to create his eligibility to the privileges above defined.

(*d*) A democratic administration of the operation of this board in its own executive function as well as in its examinations, which are to be conducted by all modern means to accomplish practical, oral and written tests of the candidates' efficiency and qualification.

(*e*) To hold examinations at the domicile of the board, and at such other locations as may be justified by the number of applicants, their residence, and the facilities for conducting examinations properly.

IV. *Personnel of the Board.*—This board shall initially consist of fifteen members as follows: Admiral William C. Braisted, Gen. William C. Gorgas, Gen. Rupert Blue, Commander Edward R. Stitt, Col. Louis A. LaGarde, Asst. Surg.-Gen. William C. Rucker, Dr. Victor C. Vaughan, Dr. Horace W. Arnold, Dr. Austin Flint, Dr. William L. Rodman, Dr. Henry Sewall, Dr. E. Wyllys Andrews, Dr. Louis B. Wilson, Dr. Herbert Harlan and Dr. Isadore Dyer.

SERVICES OF MEMBERS OF THE NATIONAL BOARD OF MEDICAL EXAMINERS

The three Surgeons-General are to serve as long as they hold their respective offices.

The others have been divided into groups of four, by lot, their terms being two, four and six years after incorporation, as follows:

	Two Years	Four Years	Six Years
Service	Pub. Health (Rucker)	Army (LaGarde)	Navy (Stitt)
Federation	.....	.....	Harlan
At large	Wilson	Vaughan	Andrews
At large	Rodman	Arnold	Sewall
At large	Flint	Dyer	.....

Hereafter the board shall comprise the Surgeon-General of the Medical Corps of the Army and one other representative of the same service to be appointed by the Surgeon-General, subject to the approval of the board.

The Surgeon-General of the Medical Corps of the Navy and one other representative of that service to be appointed by the Surgeon-General, subject to the approval of the board.

The Surgeon-General of the Public Health Service and one other representative of that service to be appointed by the Surgeon-General, subject to the approval of the board.

Three members appointed by the Federation of State Medical Examining Boards, subject to the approval of the board.

Six members at large elected by the existent National Board of Medical Examiners.

The terms of service of these members of the board shall be as follows: The Surgeons-General of the Medical Corps of the Army, the Navy and the Public Health Service shall continue as members of the board so long as they hold their offices as Surgeons-General. Nothing in this provision shall preclude their reappointment as members of the board.

The other twelve members of the board shall serve for six years each, with the provision that the first board shall be so constituted that four members shall serve for six years, four members for four years and four members for two years; these terms of office to be determined by the Executive Committee. The four new members appointed for a term of six years, as provided above, shall be one from the three federal services, one from the Federation of State Examining Boards, and two elected by the existent National Board of Medical Examiners.

There shall be nothing in this regulation which will prevent any one of the four retiring members of the board succeeding himself, if qualified by proper appointment; but no member of the board may serve more than two successive terms.

V. *Organization of the Board:* (*a*) The officers of the board shall consist of a president, a secretary and a treasurer, who, with two members at large, all annually elected by the board, shall constitute the Executive Committee of the board. The secretary need not be a member of the board. In such case he shall not vote.

(*b*) *The Duties of the President:* The president shall preside at all meetings of the board; he shall direct all business of the board ad interim; he shall be chairman of the Executive Committee; he shall decide all matters of rule and practice not provided for in these regulations and he shall represent, in person or by deputy, the board on all occasions when the board is officially engaged. With the secretary or treasurer he may issue and sign all fiscal documents for the disbursement of funds.

In the event of absence or death of the president, the board shall elect a chairman, who shall in all particulars fill the office of president pro tempore.

(*c*) *The Duties of the Secretary:* The secretary shall have conduct of all of the public relations of the board in conjunction with the president and the Executive Committee. He shall supervise and direct all arrangements for meetings of the board, examinations of candidates for licensure, and he shall fulfil the office of recorder and keeper of records. With the treasurer or president he may issue and sign all fiscal documents for the disbursement of funds. He shall be also secretary of the Executive Committee.

(*d*) *Duties of the Treasurer:* The treasurer shall be custodian of all funds; he shall deposit all moneys in a national bank in the city of Washington, keeping proper accounts of all receipts and disbursements. With the secretary or president he may issue and sign all fiscal documents for the disbursement of funds. Before each annual meeting of the board, he shall have a proper audit of his accounts by a qualified accountant, who shall make report through the secretary. He shall furnish bond, if the board so order.

(*e*) *Duties of the Executive Committee:* The Executive Committee in the intervals between board meetings shall transact all business of the board, directing, through the president and secretary, the detail of public announcements and operations as these may relate to the board, its objects, purposes and business. The operation of the Executive Committee shall be made a matter of record for report to the board at its stated meetings with a view to ratification, but without necessity of referendum of such business as may be regular or routine and not affecting the policy of the board.

The Executive Committee shall hold meetings on the call of the chairman, and as often as may be necessary or advisable.

VI. *Meetings:* The regular annual meeting of the board shall be held at the domicile of the board on ———— in each year. This annual meeting shall be held for the purpose of electing officers, of electing new members, of receiving reports of the several officers, of the Executive Committee, and for the transaction of any other business which may be on the table.

Other meetings may be called by the president on his own initiative, and other meetings shall be called on the demand of a majority of members of the board, provided such members give the president two weeks' notice of said meeting and provided the president thereafter give two weeks' notice before the date of the called meeting.

VII. *Amendments:* Amendments to this constitution may be made at any regular annual meeting of the board on thirty days' notice in writing and on a three-fourths' vote of the members present.

BY-LAWS

I. *Order of Business:*
- (*a*) Roll call.
- (*b*) Reading of minutes.
- (*c*) Communications.
- (*d*) Unfinished business.
- (*e*) New business.
- (*f*) Recommendation of candidates for licensure.
- (*g*) Election of licentiates.
- (*h*) Nomination of officers and members and Executive Committee.
- (*i*) Election of officers.
- (*j*) Adjournment.

II. *Conduct of Meetings:*

Parliamentary rules as set down in Robert's or Cushing's Manuals.

III. Dates of examinations for licentiates, regulation of examinations, detail of subjects, and their assignment, scope and time allowance shall all be determined by the Executive Committee.

IV. Amendments to the by-laws may be made at any regular meeting of the National Board of Medical Examiners by presentation in writing and by a two-thirds vote of the members present.

The thoroughness of the examination which has been planned by the board is set forth in the following:

GENERAL SCHEME OF EXAMINATION OF CANDIDATES FOR LICENTIATE OF THE NATIONAL BOARD OF MEDICAL EXAMINERS

I. PRELIMINARIES

Personal registration of candidates.

Review of credentials of candidates by board or by a qualification committee of the board.

Assignment of candidates in groups for examination.

II. ARRANGEMENT OF EXAMINATIONS ACCORDING TO SUBJECTS AND DAYS

	A. M.	P. M.
First Day:		
Anatomy and Its Divisions	Group 1	Group 2
Chemistry (and Physics)	Group 2	Group 1
Second Day:		
Hygiene and Its Divisions	Group 1	Group 2
Materia Medica, Pharmacology and Therapeutics	Group 2	Group 1
Third Day:		
Medical Jurisprudence (Forensic Medicine)	Groups 1 and 2	
Obstetrics and Gynecology		Groups 1 and 2
Fourth Day:		
Medicine and Its Divisions	Group 1	Group 2
Surgery and Its Divisions	Group 2	Group 1
Fifth Day:		
Pathology and Its Divisions	Group 1	Group 2
Physiology	Group 2	Group 1
Sixth Day:		
Medicine at Hospitals and Clinics	Group 1	Group 2
Surgery at Hospitals and Clinics	Group 2	Group 1

III. METHOD OF EVALUATING CREDITS IN EXAMINATION

Each examiner to base grades of paper on basis of 100.

Grouped examinations by different examiners to be collated or arranged on basis of 100 per cent., allowing rates of credit according to importance of the unit represented by subdivision of subjects (for example, Psychiatry, under Medicine; Operative Surgery, under Surgery).

All grades to be tabulated opposite the title or number assigned to candidate in separate lists for each general division of the examination.

All lists to be assembled and presented at a meeting of the entire examining board when each division should be reduced to a percentage based upon the following table of values.

SUBJECT VALUES

1. Anatomy	100
2. Chemistry (and Physics)	50
3. Hygiene (and Sanitary Science)	50
4. Materia Medica, Pharmacology and Therapeutics	100
5. Medical Jurisprudence	50
6. Medicine	200
7. Obstetrics and Gynecology	100
8. Pathology	100
9. Physiology	50
10. Surgery	200
Total	1,000

Passing grade to be 75 per cent. average.

One subject with grade below 50 per cent. fails.

Two subjects with grades below 70 per cent. fails.

Three subjects with grades below 75 per cent. fails.

Candidates failing at the *first* examination before board may take a *second* examination after one year; a *third* examination will not be allowed.

DETAIL OF SUBJECT-DIVISIONS AND SUBDIVISIONS

WITH SUGGESTED NUMBER OF QUESTIONS AND SCOPE AFTER EXAMINATION BRIEFLY STATED

1. ANATOMY:	
Microscopic:	
Embryology	3 questions.
Histology and Organology	3 specimens for determination, etc. 5 questions. 5 specimens for determination, etc.
Neurology	3 questions. 3 specimens for determination, etc.
Gross:	
Osteology	3 questions. 3 specimens for determination, etc.
Dissection	3 questions. Practical examination and demonstration to be determined by examiner.
Applied:	
Regional, Topographic, Surgical	3 questions. Practical examination, models, sections, etc., to be determined by examiner.
2. CHEMISTRY (AND PHYSICS):	
Organic	3 questions. Practical examination at desk.
Physiologic	3 questions. Practical demonstration at desk, or written detail of experiment on test.
Physics	3 questions. Practical demonstration at desk, or written detail of experiment, etc.
3. HYGIENE (and Sanitary Science)	5 questions on general hygiene.
Sanitary Chemistry	Demonstration in laboratory of public health, or 5 questions on laboratory tests, etc.
Vital Statistics	3 questions.
State Medicine	3 questions.

4. MATERIA MEDICA, PHARMACOLOGY AND THERAPEUTICS:	
Materia Medica	5 questions.
Pharmacology	3 questions and laboratory demonstration, or 3 questions on laboratory experimentation.
Therapeutics and Prescription Writing	5 questions, with examples of application of prescription writing.
Electrotherapeutics (including Radiotherapy)	2 questions.
5. MEDICAL JURISPRUDENCE: (Forensic Medicine)	5 questions.
6. MEDICINE:	
Theory and Practice	5 questions.
Physical Diagnosis	Practical demonstration.
Clinical Diagnosis	Practical examination on actual cases at bedside and clinic.
Clinical Microscopy (Laboratory of Clinical Medicine)	Desk examination on specimens, etc., and three questions.
Diseases of Nervous System (including Psychiatry)	3 questions.
Diseases of Children	3 questions.
Tropical Medicine	3 questions.
7. OBSTETRICS AND GYNECOLOGY	10 questions. Requirement of cases attended, properly certified.
8. PATHOLOGY (AND BACTERIOLOGY):	
Bacteriology	5 questions and identifications of specimens, outlines, etc.
Microscopic Pathology	3 questions. 3 specimens for determination, etc.
Gross Pathology (Necropsy, Autopsy)	3 questions, and identification of specimens, etc.
Surgical Pathology (Special Pathology)	5 questions, and identification of specimens.
9. PHYSIOLOGY	10 questions (5 of which on subjects of text, 5 on experimental or laboratory physiology).
10. SURGERY:	
General (including Minor Surgery)	5 questions.
Operative Surgery	Practical demonstration.
Special Surgery	
Ear, Nose and Throat	1 question.
Eye	1 question.
Genito-Urinary	1 question.
Orthopedics	1 question.
Radiology	1 question.
Skin Diseases	1 question.
Syphilis and Venereal Diseases	1 question.

Clinical diagnosis and treatment to be made subject of practical examinations at hospitals and clinics.

Although no examinations have as yet been held, the Council feels confident that the certificates granted by this board will be worthy of acceptance by every state licensing board. The Council believes, further, that through the examinations given by this board the number of physicians in the Medical Reserve Corps who can be called on to aid the government in any national emergency will be greatly increased. It was believed also that through the examinations conducted by this board an avenue will be provided by which reciprocal relations in medical licensure may be established with other countries, offers of which have already been made by some of the countries of South America.

RECOMMENDATION

Considering the well arranged plan followed in the organization of this board, representing, as it does, two legal forces, namely, the government medical services and the state licensing boards, and considering the personnel of the board as it is now constituted; the plan for its perpetuation; the fact that finances have been generously provided for its maintenance for a number of years; the safeguards which have been established for the securing of reasonably high preliminary qualifications, and the arrangement for a comprehensive and thorough examination, the Council is glad to report that it can recommend the endorsement of this national board as it now stands.

Respectfully submitted.

ARTHUR DEAN BEVAN, Chairman,
WILLIAM D. HAGGARD,
JAMES W. HOLLAND,
HORACE D. ARNOLD,
ROBERT C. COFFEY,
N. P. COLWELL, Secretary.

Report of the Council on Scientific Assembly

It was moved that the Report of the Council on Scientific Assembly be received as printed in the Handbook and referred to the Reference Committee on Reports of Officers.

Seconded and carried.

The Report is as follows:

To the Members of the House of Delegates of the American Medical Association:

The Council on Scientific Assembly was constituted at the San Francisco session. This, therefore, is our first report, and it must be regarded as a report of progress. We have held one meeting at which were discussed various problems connected with the section work of the annual scientific assembly.

You referred to the Council on Scientific Assembly the report of the special Committee on Sections and Section Work submitted to you at the San Francisco session. We carefully considered this excellent report, and in the main agree with it. As emphasized in that report, there is no doubt that too many meetings are being held at the same time, to the disadvantage of the Fellows who attend the annual session. We further agree with the report that the duplication of subjects presented in different sections at the same time could, and should, be avoided.

As to the former: The remedy, of course, is to reduce either the number of sections or the number of meetings and also of papers that shall be read in a section. As to reducing the number of sections: It does not seem feasible to do this, at least for the time being, although we might eliminate one, or possibly two. The Section on Hospitals was created five years ago and presented programs from 1912 to 1915 inclusive. The registration has been extremely small—in 1912, 25; in 1913, 22; in 1914, 24 and in 1915, 26. This year, no program has been provided. We recommend that this section be discontinued.

As to reducing the number of papers: We believe that this is possible, and that it could be done without in any way curtailing the value of the sections; in fact, that it would redound to the betterment of the sections.

As a basis for classifying the sections regarding the maximum number of papers to be read before them, we suggest that the term "unit" be recognized and defined as meaning one meeting of a section held either in the forenoon or afternoon. We recommend that the average number of papers assigned to a unit shall be six, and that the maximum number of units assigned to any one section shall be five. This will mean the discontinuance of the attempt to hold meetings on the morning of the fourth day of the Scientific Assembly. This is practically the arrangement now being carried out. Occasionally, one or two of the sections have met on the morning of the fourth day to complete their programs, but during the two annual sessions preceding this one, all the sections have adjourned on or before the close of the afternoon session of the third day.

We recommend that, for the time being, to the following sections shall be assigned the number of units indicated:

Practice of Medicine	5 units
Surgery, General and Abdominal	5 units
Obstetrics, Gynecology and Abdominal Surgery	5 units
Ophthalmology	5 units
Laryngology, Otology and Rhinology	5 units
Diseases of Children	3 units
Pharmacology and Therapeutics	3 units
Pathology and Physiology	3 units
Stomatology	2 units
Nervous and Mental Diseases	3 units
Dermatology	3 units
Preventive Medicine and Public Health	3 units
Genito-Urinary Diseases	2 units
Orthopedic Surgery	2 units

As to the duplication of subjects in different sections at the same annual session: We believe that with the cooperation that will undoubtedly be rendered by the officers of the sections, it will be possible in time so to arrange the programs that this duplication shall be entirely avoided. We are not prepared at this time to make definite recommendations as to how this shall be accomplished; it is rather an important and more or less complicated subject, and we hope to study into it further with the cooperation of the section officers and make a more

definite report later. Connected with the problem, of course, is the fact that certain subjects in the past have been neglected, while too much time has been devoted to others no more important.

Before the reorganization in 1901, the delegates met in general meetings to transact the business of the Association. At least one such general meeting was held on each of the first three days of the annual session, and at each of these general meetings an oration was delivered—one on practice, another on surgery, and another on state medicine. After the House of Delegates was constituted, the general meetings were devoted to a meeting opening the scientific work of the session and to evening meetings at which the orations were delivered. This proved unsatisfactory; it was overcrowding scientific work, and, as will be remembered, very few attended these evening gatherings to hear the orations. The practice was, therefore, discontinued, and the different orations were then made optional with the three appropriate sections, only one of which now attempts to keep up the old form. We, therefore, recommend that Section 3, Chapter XI of the By-Laws be amended by the elimination of the last sentence, which reads:

"The Sections on Practice of Medicine; on Surgery, General and Abdominal, and on Preventive Medicine and Public Health may each elect a Fellow to deliver at the ensuing Scientific Assembly the oration on practice of medicine, the oration on surgery and the oration on state medicine before their respective sections."

As stated at the beginning of this report, your Council on Scientific Assembly feels the responsibility that has been placed upon it, and realizes that changes should be made only after due deliberation both on the part of the Council itself and on the part of the House of Delegates. We therefore ask your action at this time on four things only: (1) adoption of the definition of the word "unit"; (2) The tentative adoption of the number of units assigned to the sections; (3) the discontinuance of the Section on Hospitals, and (4) the modification of the By-Laws regarding orations.

Respectfully submitted.

J. SHELTON HORSLEY, GEORGE H. SIMMONS,
E. S. JUDD, ALEXANDER R. CRAIG.
ROGER S. MORRIS,

Dr. Dwight H. Murray, New York, moved that the following be submitted to the Reference Committee along with the Report of the Council on Scientific Assembly, namely, a recommendation that the Section on Stomatology shall be modified by adding thereto the subjects of Gastro-Enterology and Proctology, and that the Section as reconstituted be accorded three units.

Memorial Resolution

Dr. Arthur T. McCormack, Kentucky, moved that when the House of Delegates adjourns, it adjourn in honor of the memory of Dr. William L. Rodman, Dr. Frank J. Lutz, and Dr. Henry B. Favill, who were respectively the President, a Trustee, and a Chairman of the Council on Health and Public Instruction.

Seconded and carried.

Report of Committee on Red Cross Medical Work

Dr. George M. Kober, District of Columbia, Chairman, presented the Report of the Committee on Red Cross, which was referred to the Reference Committee on Reports of Officers.

The report is as follows:

To the Members of the House of Delegates of the American Medical Association:

A Committee on Red Cross Medical Work was created at the 1912 session in accordance with Section 3 of Chapter VIII of the By-Laws.

The object of this committee is to stimulate in every county medical society the creation of a committee on Red Cross medical work so as to provide a body of representative physicians of approved qualification to direct or participate in medical work carried on by the Red Cross in different localities in times of war or emergencies and to advise with the representatives of that society in handling medical and sanitary problems incident to such an occurrence.

It is desired to have in every county a central committee of five physicians, two of whom shall be the president and secretary of the county medical society, ex officio. The president of the county medical society shall select the other three members, preferably from the list of councilors or of the executive committee. This committee shall be designated the "Committee on Red Cross Medical Work." The names and residences of the members, immediately after organization, should be reported to the chairman of the American Medical Association committee. In case of disaster requiring relief action by the Red Cross, these county committees will be called on to nominate qualified medical men in their respective counties for Red Cross service. The committees will also serve in an advisory medical capacity to the Red Cross in time of disaster and in other lines of Red Cross activity as indicated in a preceding paragraph.

Up to May 1, 1916, 588 county medical societies, located in forty-eight states, inclusive of the District of Columbia, have created committees on Red Cross medical work, and 2,940 representative men of the medical profession are available to render valuable assistance to the American Red Cross in any of its activities.

During the present European war many of these committees have been called on by Major Robert U. Patterson,

NUMBER OF COUNTY MEDICAL SOCIETIES BY STATES WHICH HAVE APPOINTED COMMITTEES ON RED CROSS MEDICAL WORK

Alabama	8	Nebraska	12
Arizona	7	Nevada	1
Arkansas	14	New Hampshire	5
California	16	New Jersey	8
Colorado	8	New Mexico	6
Connecticut	6	New York	31
Delaware	1	North Carolina	6
District of Columbia	1	North Dakota	5
Florida	6	Ohio	33
Georgia	11	Oklahoma	18
Idaho	1	Oregon	4
Illinois	43	Pennsylvania	35
Indiana	44	Rhode Island	6
Iowa	27	South Carolina	6
Kansas	12	South Dakota	5
Kentucky	14	Tennessee	13
Louisiana	6	Texas	42
Maine	5	Utah	2
Maryland	1	Vermont	5
Massachusetts	15	Virginia	10
Michigan	14	Washington	5
Minnesota	9	West Virginia	8
Mississippi	11	Wisconsin	11
Missouri	21	Wyoming	1
Montana	5		
Total	588		

Medical Corps, U. S. Army, and Chief of Bureau of Medical Service of the American Red Cross, to report on the qualifications of physicians and surgeons offering to serve the Red Cross in Europe. The indorsements have been invaluable in the selection of men, as it is highly important that reputable men only be chosen, in order to protect the American Red Cross and the reputation of the medical profession whom they represent abroad. Some of the committees have been called on to act as instructors and judges in contests organized by the First Aid Department of the Red Cross, for miners, railway service men, industrial workers, etc.

The Reference Committee on report of the officers at the session of the House of Delegates held June 21 to 24, 1915, deemed it advisable that the activities of your committee be directed through the state association rather than with the county societies directly. This course will hereafter be pursued in spite of the considerable delay caused thereby.

The American Red Cross in order to aid in the general cause of preparedness will appoint a national committee on Red Cross medical work for the purpose of coordinating the work of state and county committees with the various activities of the Red Cross. A copy of the proposed regulations of the national committee on Red Cross medical service is herewith submitted (see Appendix A). It is believed that the central committee will approve these regulations at a meeting to be held during the month of May. Upon the approval of these regulations it is the intention of your committee to renew its activities through the state medical societies, with

the hope that the efforts will stimulate into existence the creation of committees on Red Cross medical work in all state and county societies which have not yet responded to the general call of preparedness.

Your committee respectfully recommends that the President of the American Medical Association invite the attention of the state medical societies to the desirability of prompt organization of state and county committees on Red Cross medical work, so that the American medical profession may be prepared to respond should the country need their services.

Respectfully submitted.

GEORGE M. KOBER, Chairman.
WILLIAM J. LYSTER,
Medical Corps, U. S. Army.
R. C. HOLCOMB,
Surgeon U. S. Navy.

APPENDIX A.

REGULATIONS OF THE NATIONAL COMMITTEE ON RED CROSS MEDICAL SERVICE

REVISED BY THE SPECIAL COMMITTEE TO WHICH THEY WERE REFERRED BY THE EXECUTIVE COMMITTEE, FEB. 12, 1916. FINAL DRAFT AS APPROVED BY THE COMMITTEE, MAY 3, 1916.

Organization.—The National Committee on Red Cross Medical Service shall consist of forty-six (46) members, thirty-six (36) to be appointed by the Central Committee of the American Red Cross, and ten (10) ex officio members. The former shall be appointed, twelve to serve for one year, twelve to serve two years, and twelve to serve three years; and thereafter when vacancies occur the appointments to fill them shall be for three years. The ex officio members shall be:

The Surgeon General, U. S. Army.
The Surgeon General, U. S. Navy.
The Surgeon General, U. S. Public Health Service.
President, American Medical Association.
President, Congress of American Physicians and Surgeons.
President, American College of Surgeons.
The Director General of Military Relief.
The Director General of Civilian Relief.
The Chief of the Medical Bureau.
The Chairman of the National Committee on Red Cross Nursing Service.

The director general of military relief shall be the chairman of this committee, and the chief of the medical bureau shall be its secretary, and its records shall be filed in the office of the former.

No person shall be deemed qualified to be a member of the national committee who is not a member of the American Red Cross.

Duties of the Committee.—The duties of the national committee shall be as follows:

To organize the medical service of the American Red Cross.

To make uniform rules for enrolment.

To have general supervision over the work of state and other aids and committees organized for Red Cross work under agreement with the Presidents of the American Medical Association, the Congress of American Physicians and Surgeons, and the American College of Surgeons.

To aid the director general of military relief in the organization of field and hospital columns and the providing of the medical personnel for the same.

To study the medical service of the Red Cross in other countries.

The resolutions of the national committee shall be carried out as to administrative details by its secretary, and its routine business transacted by an executive committee of three appointed jointly by the President of the American Medical Association, the President of the Congress of American Physicians and Surgeons, and the President of the American College of Surgeons. The chairman of the national committee shall be ex officio chairman of the executive committee. This committee shall have authority to receive and file in the national office of the Red Cross the applications and credentials of all physicians who have been approved by local committees or aids for enrollment as Red Cross medical officers; to enroll them and to issue them cards of appointment; to keep at the national office card catalogues of state and local committees, aids, and of enrolled physicians; to distribute blank forms of enrollment, and to give the necessary instructions to state and county committees.

Assignment to Duty.—Assignment to duty in case of war will be by the director general of military relief, in consultation with the surgeon general of the military service to which assignment is to be made. Assignment in case of disaster to the civil population will be by him, in consultation with the director general of civilian relief.

Meetings and Reports.—The National Committee on Red Cross Medical Service will hold two meetings each year—one in Washington about the time of the annual meeting of the American Red Cross, and one at the time and place of the meeting of the American Medical Association. Special meetings may be held on the call of the chairman, or at the request of one third of the committee members. Nine (9) shall constitute a quorum at any meeting.

Reports of the year's work shall be made to the chairman of the central committee at the time of the annual meeting of the American Red Cross in Washington.

STATE COMMITTEES

State committees shall consist of not more than nine (9) physicians, who shall be members of the American Red Cross, and selected three members each by the President of the American Medical Association, the President of the Congress of American Physicians and Surgeons, and the President of the American College of Surgeons (one of them to be the president of the state medical society). This committee shall elect its own chairman and secretary, and shall hold annual meetings at the time and place of the state medical society meetings.

Each state committee of the American Red Cross Medical Service shall be entitled to one delegate to the annual meeting of the American Red Cross held at Washington on the Wednesday preceding the second Thursday in December.

Duties of State Committees.—State committees shall correspond with county medical societies and other individuals or societies with reference to the organization and work of local committees or aids.

They shall report to the chairman of the National Red Cross Medical Committee, at Washington, D. C., the formation of all local committees, with the names and addresses of the members of the same.

They shall have power to recommend to the national committee the dropping from a local committee of any member of such committee for reasons deemed by them sufficient, and shall report such action to the chairman of the National Red Cross Medical Committee at Washington.

LOCAL COMMITTEES

Local committees shall be identical in membership with the Committee on Red Cross Medical Work appointed by the presidents of the state committees, provided that each member so appointed is or becomes a member of the American Red Cross.

Duties of Local Committees.—Local committees, in their capacity as representatives of the National Committee on Red Cross Medical Service, shall distribute blank forms for enrolment, provided by the National Red Cross Medical Committee, such forms to provide for enrolment for service in case of war as follows:

Class A: To consist of physicians willing to serve wherever needed, at home or abroad, in field, hospital, supply columns, or intelligence sections.

Class B: To consist of those willing to serve in the home country only.

Class C: To consist of those willing to serve at place of residence only.

They shall distribute forms also for enrolment in case of disaster under the three classes above specified.

To determine whether applicants meet requirements and are desirable.

To forward to the state committee applications for enrolment, with credentials and proper recommendations, including applications not recommended for acceptance.

To recommend annulment of enrolment for sufficient cause, after proper investigation and granting a hearing to the physician concerned, forwarding all papers through the state committee to the chairman of the national committee at Washington for the final action of the national committee.

To disseminate among physicians in good standing information as to the requirements of the medical service.

Local committees shall meet at the call of the chairman, preferably at the time of the meeting of the county or other local medical society, and the secretaries of such committees may procure information, blank forms, necessary supplies, and the refundment of expenses and postage used in the correspondence of the committee about Red Cross matters, by application to the secretary of the National Red Cross Medical Committee, Washington, D. C.

RULES FOR ENROLMENT

Application for enrolment shall be made through the local committee, or on recommendation of a member of the National Red Cross Medical Committee.

Blanks shall be filled out in the applicant's own handwriting.

Requirements for Enrolment.—The candidate for enrolment must be between 25 and 50 years of age, a graduate of a recognized medical school, licensed to practice in one of the states, and must be recommended by a local or state committee, or a member of the national committee on medical service. In special cases physicians and surgeons may be enrolled by the national medical committee without reference to the above-named requirements, because of recognized special fitness and professional distinction.

Full details will be furnished by the secretary of the national committee, at Washington.

All persons, of whatever class, shall, if practicable, pass a satisfactory physical examination before being accepted for active service.

All physicians enrolling must become members of the American Red Cross.

Appointment and Badge.—Certificates of appointment will be provided to all who enroll themselves.

Resignation.—A physician may resign, but should do so in writing to the secretary of the national medical committee through the county committee.

Uniform.—The uniform prescribed by the American Red Cross, and approved by the War Department, will be worn during service in time of war. In time of disaster the usual civilian dress shall be worn. Uniforms will usually be worn by organized units, such as field columns for drill inspection, camps and parades.

Physicians are not at any time to wear Red Cross brassards without especial authority from the American Red Cross, and then only when engaged in active relief work. In the event of war, such brassards can be issued only with the consent of the War or Navy departments.

Physicians need not respond to a call for service in time of peace when such response would seriously interfere with duties already assumed; but in the event of war in which the United States may be involved, all Red Cross physicians would be expected to report to the chairman of the national medical committee at Washington, D. C., the earliest possible date on which they could be available for active service in the class in which enrolled, and should thereafter hold themselves in readiness.

Compensation.—An enrolled physician called on for active service under the Red Cross will receive the same pay as is provided by law for a major in the United States Army medical corps in case his appointment is as a director; the pay of a captain, medical corps, for an assistant director, and that of lieutenant in the medical corps for a staff physician or surgeon, with proper maintenance, traveling expenses and laundry allowance.

First Aid and Life Saving Courses.—The National Committee on Red Cross Medical Service should interest itself in extending to the industrial employees of the country instruction in first aid and in life saving which are under the direction of the Medical Bureau of the American Red Cross.

Dr. Aruthur T. McCormack, Kentucky, moved that the House of Delegates adjourn until Tuesday, 2 p. m.

Seconded and carried.

Accordingly, the House thereupon adjourned.

ADDENDUM

Report of the Judicial Council

[See page 1944, substitute for first four lines:]

Dr. Alexander Lambert, New York, Chairman, presented the Report of the Judicial Council, together with an addendum, reporting the action of the Judicial Council in disciplining members. He followed this report with the report of the sub-committee of the Council on Health and Public Instruction on Social Insurance. Following is the report on Discipline of Fellows:

DISCIPLINE OF FELLOWS

During the year there has come before the Judicial Council one case for discipline. During August and September, 1915, there was furnished to the secretary of the American Medical Association evidence in support of a charge that Dr. George Ben Johnston of Richmond, Va., had been guilty of unprofessional advertising; that in a certain daily newspaper in Richmond, Va., Dr. Johnston had caused to appear a cartoon of himself for medical advertising purposes and had paid for it himself. This evidence was in the form of a letter addressed to the secretary of the American Medical Association from Dr. Charles V. Carrington of Richmond, Va., and supported by copies of correspondence between Dr. J. Shelton Horsley and the office of the newspaper which printed the cartoon. The authenticity of these letters was confirmed by the secretary of the Association writing directly to Dr. Horsley. In addition, correspondence between the secretary of the Association and Dr. Robert C. Bryan, of Richmond, and other letters concerning this and other charges against Dr. Johnston were presented to the Council. In pursuance of the standing rule passed in San Francisco in June, 1915, that the secretary of the American Medical Association shall file charges with the Judicial Council against Fellows of the Association when overt acts on the part of such Fellows, supported by reasonable evidence, are brought to the attention of the secretary of the American Medical Association, the secretary of the American Medical Association transmitted the following letter to the Judicial Council:

"Gentlemen: The attention of the secretary of the American Medical Association has been called to a cartoon published in the Richmond *Evening Journal* for Jan. 15, 1915, the subject of which is Dr. George Ben Johnston of Richmond, Va., a Fellow of the American Medical Association; and to the photographic reproduction of the form of contract entered into by the Richmond *Evening Journal* and the subjects of a series of cartoons of which this of Dr. Johnston is one, for the publication of these cartoons; together with correspondence which seems to establish the fact that Dr. Johnston was a party to the publication of the cartoon in the Richmond *Evening Journal*, issue of Jan. 15, 1915.

"Consequently, in compliance with the standing rules adopted by the House of Delegates, the secretary charges Dr. George Ben Johnston of Richmond, Va., with unprofessional conduct, in that he caused to appear in Richmond, Va., a cartoon calling attention to himself and his professional work in a manner contrary to Section 4, Article 1, Chapter II of the Principles of Ethics of the American Medical Association."

A meeting of the Judicial Council was duly set for Nov. 5, 1915, to hear these charges. At this meeting of the Judicial Council Dr. George Ben Johnston appeared in person to answer to the charges. The charges were read. The chairman advised Dr. Johnston of his rights and of the procedure of the Council. Dr. Johnston then stated that he had contracted and paid for the caricature complained of, as had also many prominent and reputable citizens of Richmond, including two other reputable physicians, without, however, any thought or expectation of professional advantage to be gained from it, as, in his opinion, such newspaper notice could not be of any professional advantage to a physician but, on the contrary, it might work an injury. Dr. Johnston further stated that he was actuated solely by the fact that many of his friends and neighbors of the highest standing in his community had signed the same contract form for cartoons of themselves. He further stated that he did not see or instigate the reading matter attached to the cartoon

and had no intimation of what would be printed in connection with his caricature and that he was humiliated by what appeared in that connection.

There were further matters presented stating gross professional derelictions on the part of Dr. Johnston. These matters were not in the charges filed with the secretary of the American Medical Association and were therefore judged extraneous matter and could not come before the Judicial Council for its consideration. Dr. Johnston asked the opportunity to show animus in the matter of the charges, which opportunity was given him. Dr. Johnston produced a letter from Dr. Stuart McGuire of Richmond, Va., in which Dr. McGuire stated that he had been induced to permit a cartoon of himself to be published in this same *Evening Journal* of Richmond, for which he had also paid. Dr. McGuire went on to say that some weeks after the appearance of the cartoons of Dr. George Ben Johnston, Dr. W. T. Oppenheimer and Dr. McGuire, a letter was received by Dr. McGuire from Dr. H. C. Smith of Crewe, Va., who condemned his course for permitting the cartoon in the *Evening Journal* and who notified Dr. McGuire that he, Dr. Smith, had preferred charges to the Richmond Academy of Medicine and the Medical Society of Virginia against Dr. Johnston, Dr. Oppenheimer and Dr. McGuire for unprofessional conduct. Dr. McGuire replied to this that he would welcome an opportunity to explain the circumstances which had led to the alleged violation of the Principles of Ethics; that he had afterward received a message from Dr. Smith saying that the charges were withdrawn.

Dr. McGuire further stated that about this time Dr. Charles V. Carrington came to his office, the object being to ask Dr. McGuire to take no action that would revive the charges and lead to an investigation by the local society, and that Dr. Smith had been induced to withdraw his charges because it was believed that while the Judiciary Committee would exonerate Dr. Johnston, Dr. Oppenheimer and Dr. McGuire of having intentionally done anything wrong, the charges at that time would injure Dr. McGuire. Dr. Carrington said that while he did not wish to hurt Dr. Oppenheimer or Dr. McGuire, he did wish to use the incident at some future occasion to injure Dr. Johnston. This statement Dr. McGuire further said had been submitted to Dr. Carrington, and Dr. Carrington's recollection of the interview differed materially from Dr. McGuire's. Dr. McGuire attached Dr. Carrington's written version of the conversation, from which it appeared that when Dr. Carrington heard that Dr. Smith had preferred charges against Drs. Johnston, Oppenheimer and McGuire, that he, Dr. Carrington, had agreed with Dr. Horsley to make every effort to have Dr. Smith withdraw his charges against all these gentlemen, temporarily at least, because they believed the charges would injure Dr. McGuire, whom Dr. Carrington believed to be unjustly accused of wrong doing. Dr. Carrington further stated that he believed even if charges were not withdrawn and the Richmond Academy of Medicine entertained them, all three of them would be exonerated. Dr. Carrington said at the time he went to see Dr. McGuire to discuss these charges against Dr. McGuire, he had no idea of preferring charges in this matter against Dr. Johnston in any society, or of using it against Dr. Johnston in any way at any future time. Dr. Carrington acknowledges, however, that he told Dr. McGuire that while as Dr. McGuire's friend he was interested in trying to help Dr. McGuire out of an embarrassing situation, he had no such feeling for Dr. Johnston and did not care how badly Dr. Johnston was hurt. Dr. Carrington further states that after this conversation with Dr. McGuire, he (Dr. Carrington) and Dr. Horsley wrote a letter to Dr. Smith in consequence of which Dr. Smith withdrew his charges against all three.

The Judicial Council believes that this is a type of case that should have been dealt with by the local medical societies before it should have been brought for action to the Judicial Council. The Judicial Council, therefore, deprecates the withdrawal, without trial, or opportunity for defense by the accused, of these identical charges from the Richmond Academy of Medicine after being filed therein. The Judicial Council does not condone or minimize unethical advertising in this or any instance, but the Council does believe that the matter complained of was inadvertent and thoughtless and was done with no thought of professional gain or personal advantage. In view of this and the attitude of Dr. Johnston in the premises, the Council believes that the facts elicited do not constitute sufficient cause for action, and the Council therefore acquits Dr. Johnston of any intent whatsoever to violate the Principles of Ethics or to do an unprofessional act.

Respectfully submitted.

ALEXANDER LAMBERT, Chairman,
JAMES E. MOORE,
HUBERT WORK,
A. B. COOKE,
RANDOLPH WINSLOW,
ALEXANDER R. CRAIG, Secretary.

[See p. 1945. Add first column, four lines from the bottom, after the words "of the Scientific Assembly."]

It was further suggested to me this morning by Dr. Simmons that a further amendment to the By-Laws should be considered in this connection—namely, that the general meeting of the American Medical Association should be changed from Tuesday morning to Tuesday evening, making the general meeting occur the evening before the meeting of the sections. The Scientific Assembly, therefore, would begin on Wednesday morning and a half day of time could thus be saved.

[See p. 1985. Add second column following signature of Dr. Alexander Lambert.]

Dr. Arthur T. McCormack, Kentucky, moved that the House of Delegates extend its gratitude to Dr. Lambert and his Committee on Social Insurance for the complete and exhaustive report that they had made.

Seconded and carried.

The report was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

(*To be continued*)

Factory Inspector's Report.—The report of the Illinois State Factory Inspector for 1914-1915 shows that 32,981 child labor inspections in 32,260 establishments were made during the year, which was an increase of more than 5,000 inspections over the previous year. There were 156 convictions for infractions of the Child Labor Law, which provides that children under 14 shall not be employed in the industries. At the sessions of the last legislature it was endeavored to have the limit raised to 16 years, but this failed. The chief factory inspector favors raising the working age, among other reasons, because a physical examination before entering employment will be required of all workers in the near future, and he believes that beginning work at too early an age will so weaken and prevent the development of children that later when examinations are required many of them will fail of employment. The state now has a ten-hour law for women, and inspections disclose that in many instances they are worked longer than that. Two hundred and eighty-one prosecutions were brought for such violations. The workmen's compensation act was improved by the last legislature and the minimum compensation for injury resulting in death was raised to $1,650, and the weekly compensation to $6 as a minimum. Under the occupational disease law, 595 inspections were made and a few orders for compliance issued. It is said more orders were not issued because many establishments have about completed installations in compliance with the law on previous general orders issued by the department. Under the Health, Safety and Comfort Law, nearly 7,000 inspections were made in as many establishments, and over 39,000 orders were issued to correct defective and dangerous conditions in buildings, with reference to sanitation, power transmission, dangerous machines, etc. The law allows thirty days to comply with such orders. On reinspection it was found that over 29,000 of these orders had been complied with. Ventilation inspections under this law showed 245 violations out of 254 workrooms examined.

Medical News

PARIS LETTER

(*Continued from page 1935*)

The War

VENEREAL DISEASES IN THE ARMY

The various districts have just made a statistical return of the venereal diseases treated during the months of January and February, 1916, and from these returns, which are for the whole of the troops, including those at the front and those in the interior of the country, the following figures have been taken:

Gonorrhea	7,813
Chancroid	962
Primary or recent syphilis	2,987
Total	11,762

Of this total of 11,762 infections, 9,419 have been proved to be contracted in the interior of the country. This figure serves as the best indication of the existence and persistence of foci of contagion in the different districts, outside of the zone of the army.

The undersecretary of state for the medical service has communicated these significant figures to generals in command of the districts, begging them to do their utmost, in cooperation with the civil authorities, to take every step necessary to stamp out the development of venereal diseases and to encourage every initiative and to avail themselves of every help with the view of checking the excessive prevalence of these diseases.

TREATMENT OF ABDOMINAL WOUNDS AT THE FRONT

This subject has given rise at the Société de chirurgie de Paris to a very interesting exchange of views. Dr. Tuffier of the Faculté de médecine de Paris was thought not to have been sufficiently categoric in the condemnation of the method of abstention, and had expressed himself as partisan of intervention only when the surgeon's equipment and the condition of the wound were such as to promote a favorable prognosis. Professor Quénu opposed this opinion vigorously. Quénu refuses to admit that soldiers with abdominal wounds should be abandoned to their fate because of insufficiency of the means of treatment. The means of treatment exist; it will be sufficient to multiply during the period of actual battle the organizations for using them and to accumulate the latter where the most wounded congregate. Drs. Delbet, Rochard, Monprofit and Broca were of the same opinion, and the latter moved a resolution for a public pronouncement on the part of the Société de chirurgie in favor of early intervention in abdominal wounds. The société passed this resolution unanimously. In addition, a resolution was passed that, in order to insure for the seriously wounded, and especially those in whom early intervention has a considerable influence on the possibility of success, the automobile ambulances should be concentrated at the point where the most wounded are assembled according to needs and for the time necessary.

RESECTION OR AMPUTATION

In serious wounds of the knee, elbow, hip and foot should the limb be amputated? Ought we to limit ourselves to the resection of the injured articulation? Drs. Tuffier and Nové-Josserand, in a communication to the Académie de médecine, as the outcome of the study of the functional results given by resections, conclude that this operation should always be preferred to amputation, for it always leaves a limb more useful than any apparatus, whatever may be the perfection of the latter. Amputation is justifiable only to save the life of the patient when, for that purpose, resection of the articulation would be insufficient. One may have to practice such a resection either immediately after the infliction of the injury or later, in consequence of serious suppuration, or still later to increase the mobility and strength of the limb. They give the results of 1,810 cases made up as follows: 630 elbows, 350 shoulders, 282 knees, 231 ankles, 152 wrists, 122 hips, 29 posterior tarsus and 14 anterior tarsus. Tuffier and Nové-Josserand state that for the shoulder joint the functions in the limb are good in 48 per cent. of cases. At the elbow results are variable, depending on whether or not the excision has taken place immediately after the infliction of the wound. In the former case the functional results are not encouraging (30 per cent. good), but still they are much better than would be given by an artificial forearm. Secondly, the results are but little better (32 per cent.). Approximately the same figures are obtained for the wrist. For the lower limbs, on which they have performed 20 per cent. fewer resections than on the upper limb, the operation at the hips gave about 75 per cent. of favorable results. A patient walking, with or without the help of an apparatus, is always at any rate better off than with a false limb. As to the knee, in this case mobility is not sought by the operation; on the contrary, to give a really useful limb rigidity is necessary. This result was obtained in 95 per cent. of the cases; but when this operation is performed immediately after the wound, the results, both as regards the life of the patient and the functions of the limb, are much superior to those which one obtains when the articulation is removed for suppuration. The same is true for the operation on the foot.

It is probable that the reason why these operations have not been more often practiced is that they are always laborious, very often difficult and can be carried out in a satisfactory manner only by experienced surgeons. The instructions given long ago by the Lyons surgeon, Ollier, are those which one should follow to obtain the best results.

INJUDICIOUS OPERATIONS ON THE EYE FROM A MILITARY POINT OF VIEW

In a previous letter I have mentioned Dr. E. Valude's opinion according to which wounded soldiers suffering from traumatic cataract of one eye should not be operated on if the other eye is intact and normal (THE JOURNAL, March 27, 1915, p. 1089). Valude insisted on the fact that in such cases intervention cannot possibly produce in the vision any improvement of military value, and that a slight advantage in case of a successful result had to be set off against the danger of serious sequelae in operating early on cataracts, these traumatic cataracts being particularly liable to infection, especially in young subjects. Finally, one has to face the possibility of a disastrous sympathetic ophthalmia consecutive to complications in the operated eye. In his original communication he spoke of this danger only as theoretical, but he has just observed a case in a soldier, aged 23, who, October 8, received from a shell fragment a serious contusion of the right ocular region without a wound. As a result of this there was a traumatic cataract of the right eye but absolute integrity of the left eye. He was transported to an ophthalmologic field hospital where he underwent an operation for the cataract, about December 7. Cyclitis resulted, and almost immediately an ultramalignant sympathetic ophthalmia of the left eye. This soldier presents the signs of iridochoroiditis of the most formidable hemorrhagic type. Blindness is, of course, inevitable. The result, from the point of view of the patient, is blindness at 23 years of age, and from the point of view of the state, first, a military unit lost, and, secondly, the highest pension to be paid to the patient, all because of an attempt to restore the vision which, in any case, would have been very imperfect and which would have been useless for military purposes.

Valude is also of the opinion that the operation for strabismus should not be practiced in a military hospital. The result cannot be of any military value.

THE OCCUPATION OF SCHOOLS AS MILITARY HOSPITALS

The minister of public instruction has just received from the Fédération des associations de parents d'élèves de lycées et collèges (Federated Association of the Parents of High School and College Pupils) a letter with regard to the prolonged occupation of a large number of schools as military hospitals. To this letter were annexed complaints from different associations concerning the high schools of Paris, Algiers, Bordeaux, Grenoble, Limoges, Marseilles and Montpellier. The inconvenience produced by the present situation was summed up in this way by the federation; overcrowding of the pupils in makeshift buildings which are altogether inadequate and very often insanitary, disturbance of the course of study, and dangers of epidemic.

DELAYED TETANUS

An interesting discussion took place at the Réunion médicale de la IV-e armée on the subject of delayed tetanus and of the preventive efficacy of antitetanic serum. Dr. Potherat, surgeon of the Paris hospitals, reported two characteristic examples. In spite of the treatment by Baccelli's method and the administration of large doses of chloral, one of the patients died, but the other recovered. In the first patient the tetanus manifested itself three weeks after the

receipt of the wound; in the second there was an interval of more than two months. In the latter a fragment of shell which had escaped notice was left behind and was removed after roentgenoscopy. The former, whose humerus had been smashed immediately below the tuberosities, had retained, among the irregularities of the scapular fragment, portions of clothing which were not detected by digital exploration or removed by washing. Potherat attaches great importance to the presence of foreign bodies and in particular to fragments of clothing as bearers of tetanus bacilli in suppurating wounds. Antitetanic serotherapy, however certain and undeniable may be its preventive value, can never be depended on to overcome all the causes favoring development of tetanus. It is efficacious but not infallible, and one must not neglect to supplement it by practices which have justified themselves in many a circumstance. These consist of free exposure of irregular and soiled wounds, the systematic ablation of necrosed or necrosing parts, the removal of all substances, such as foreign bodies, which can be bearers of the tetanus bacillus, and finally careful and abundant washing with solutions which set free oxygen. Though the objective phenomena are less violent in delayed tetanus than in the early form, it is erroneous to suppose that for this reason delayed tetanus is less serious, fatal results being quite common.

Dr. Paul Boucher has reported two cases of delayed tetanus differing much from one another. In the first case there was a penetrating wound of the chest due to a fragment of shell. This patient received a prophylactic injection of antitetanic serum (10 c.c.) on the day of his reception at the ambulance, which was also the day on which he was wounded. On the twentieth day, thoracotomy was performed for purulent pleurisy, and the projectile was removed. Tetanus made its appearance on the twenty-third day and was fatal. Only one injection of serum had been given. The second case belongs to a category which it will never be possible to avoid. A man suffered a fracture of the vertebral column. There was no perceptible external breach of continuity of the skin; nevertheless, the man developed tetanus on the tenth day after the injury and he died. One prophylactic injection had been given.

Dr. Vincentelli brought forward a case of a man, aged 32, wounded by shell fragments in the two calves, in the shoulder and in the buttocks. Each of these wounds, narrow but very deep, provoked a gangrenous phlegmon with fetid pus. In the twenty-four hours which followed the receipt of his wound, this man had one injection of antitetanic serum which was also the last. After five days' traveling he arrived at the hospital, where the four phlegmons were opened up, drained and freely washed. The pus and the fever disappeared almost completely. Ten days later fragments of shell, of clothes and of the right fibula were removed. Everything seemed to be going on normally except that there were a very marked pallor and bluish venosities over the whole body whose origin it was difficult to explain. Moreover, there was observed an excessive excitability of the muscles of the incised calf. Twenty-three days after the receipt of his wound, and after the only injection of serum, and eight days after the second surgical intervention, he was seized with tetanus which proved fatal in forty-eight hours.

From these facts it may be concluded that the prophylactic action of antitetanic serum is of short duration; in some cases it has not extended beyond eight days. Therefore, in wounds with persistent suppuration, the injection must be repeated every week.

Suppression of Rag Picking in Paris

At the Académie de médecine Dr. Wurtz of the Faculté de médecine de Paris in the name of the Section of Public Hygiene, Legal Medicine and Medical Police read an important report on the question of suppression of rag picking in Paris. The report demands that, for reasons of public health, this practice should be suppressed in the capital and its neighborhood, both on private premises and on the public streets. The sorting of garbage should be undertaken solely in the municipal destructor works. Garbage cans and wagons should be hermetically closed.

An American Honored

Miss Edith Wharton, an American citizen and writer, has just been appointed, by decree, chevalier of the national order of the Legion of Honor in recognition of her charity and her devotion to benevolent works.

Miscellany

Medical Supervision in Industry

Dr. A. B. Emmons, 2d, director of appointments for the medical alumni of the Harvard Medical School, in a recent article (Industrial Medical Supervision, *Boston Med. and Surg. Jour.*, April 6, 1916, p. 495) presents an account of the results of medical supervision in a factory employing from 700 to 1,100 workers, chiefly unskilled. The factory in question manufactures candy; about two thirds of the employes are women. The medical supervisor's duties are (1) to see that every employee who comes into contact with the candy or any of its ingredients is free from communicable disease; (2) to see that every new employee is physically fit for work, and (3) to keep the employees in good health. Foremen or forewomen are instructed to report any worker who presents a cough, a rash or any other sign of physical ailment; in addition, the medical supervisor inspects every department, besides keeping office hours three times a week in the factory. A graduate nurse is on duty all the time. Every employee must be successfully vaccinated before he enters on his position; if he is temporarily absent from work, his health must be certified by the medical supervisor before he is allowed to resume his task. All persons suffering from venereal disease or tuberculosis, or addicted to the habitual excessive use of alcohol, are discharged, the first class because they constitute a danger to others, the second because employment in a factory is injurious to themselves as well as dangerous to others, and the third because to keep such persons near high-power machinery is to court disaster. Employees affected with transmissible diseases are excluded from handling candy until they are well. If some particular form of work affects an employee injuriously—for instance, if a man strains his back lifting barrels or a girl develops flatfoot from too much standing—the physician confers with the superintendent and secures a change of work for that employee. The service is without cost to the employees. The testimony of all concerned is that the medical supervision is of value to the employer in the greater efficiency of the working force, to the employees in the increased comfort and physical well-being secured, and to the public in the guarantee of a sanitary product. It would seem that manufacturers of food products especially would find it to their advantage to install medical inspection, both for its direct and for its advertising value.

Principal Causes of Death

The Bureau of the Census has just issued a bulletin of the principal causes of death in the registration area in 1914. More than 30 per cent. of the 898,059 deaths reported from the registration area, which contains about two thirds of the population of the United States, were due to three causes: heart disease, tuberculosis and pneumonia. More than 60 per cent. of the total number of deaths were due to eleven causes. In addition to the three named they were: acute and chronic nephritis; cancer, diarrhea and enteritis, apoplexy, arterial diseases, diphtheria, diabetes and typhoid fever. The deaths from heart disease numbered 99,534, or 150.8 per hundred thousand of population. This is an increase over the rate of 1900, when it was only 123.1. The number of deaths from tuberculosis was 96,903, of which 84,366 were lung cases, including acute miliary tuberculosis. In the period from 1904 to 1914, the death rate from tuberculosis in all its forms fell from 200.7 to 146.8 per hundred thousand, the decline being continuous from year to year, a decrease of more than 25 per cent. Pneumonia, including bronchial pneumonia, was responsible for 83,804 deaths in the registration area, or 127 per hundred thousand, the lowest rate on record. Pneumonia, like tuberculosis, has also shown a decline since 1900, when it was 180.5 per hundred thousand. Acute and chronic nephritis had a death rate of 102.4 per hundred thousand, and is the only disease other than those named having a rate above 100. The total number of deaths was 67,545, an increase from 89 per hundred thousand in 1900

to 103.4 in 1905. Cancer and other malignant growths caused 52,420 deaths; 19,889, or almost 38 per cent., were the result of cancer of the stomach and liver. The rate for cancer has risen from 63 per hundred thousand in 1900 to 79.4 in 1914. Only two years during this time showed a decline as compared with the years immediately preceding, the increase having been almost constant. Apoplexy showed 51,272 deaths, or 77.7 per hundred thousand. The rate for apoplexy has also gradually increased, with only occasional slight declines since 1900, when it was 67.5. Arterial diseases caused 15,044 deaths, or 22.8 per hundred thousand. It is said that no epidemic disease produced a death rate as high as 18 per hundred thousand in 1914. A notable decrease in these diseases was that for diphtheria. In 1914 the deaths numbered 11,786, or 17.9 per hundred thousand, a fall from 43.3 in 1900, representing a decline of nearly 59 per cent. Diabetes caused 10,666 deaths, a rate of 16.2; in 1900 it was 9.7. Typhoid fever declined since 1900 from 35.9 to 15.4, a fall of 57 per cent. The epidemic maladies of childhood, whooping cough, measles and scarlet fever, caused 15,617 deaths, of both adults and children, or 23.7 per hundred thousand. In 1913 measles led in the death rate of these three diseases, but in 1914 whooping cough had first place. In every year since 1910 measles has caused more deaths than scarlet fever. Interesting figures are also shown in regard to railway and street car accidents. Railway accidents and injuries totaled 7,062, or 10.7 per hundred thousand. This includes deaths from collision between railway trains and vehicles at grade crossings. These figures are said to be the lowest on record. Street car accidents and injuries numbered 1,673, or 2.5. This is likewise the lowest on record for this character of accidents. There were 10,933 suicides, or 16.6 per hundred thousand.

Public Health Threatened

The public health committee of the New York Academy of Medicine protests very properly against the monstrous resolution lately introduced in Congress by Senator Works of California for no imaginable purpose except to injure or discredit the endeavors of the United States Public Health Service. If Senator Works were to have his way no officer or other person in this service would be permitted to join or be associated in any manner whatever with any public or private medical or scientific society.

A more preposterous and absurd proposal was never laid before a body of legislators for serious consideration. If the object is to separate the members of the Public Health Service from all others concerned in similar or kindred efforts it is rightly conceived, and, indeed, considering the whimsical views of the senator and his woeful ignorance of the problems of public health, it is clear that that is precisely what he aims at, his supposition being that the *American Medical Association* and all associations of scientific men are essentially evil.

No one who has ever heard or read the vain and extravagant rhapsodies of Senator Works is likely to mistake him for a thinker or one competent either by nature or training to form a reasoned opinion on public health; but there is some danger that he may impart to others who do not take the trouble to think for themselves some tincture of his own suspicion that the great medical societies are engaged in a conspiracy to control the administration of public health for their own profit.

Even the densest must see, however, that in an enterprise of this kind it is of essential importance that the officers of the government should be in close touch with those engaged in medical work throughout the country, and that nothing could be better calculated to paralyze the central body than to forbid association with learned bodies elsewhere. Without the cooperation of all concerned in work of this nature, the United States Public Health Service would be useless and might as well be abolished outright. Such an event would probably gratify Senator Works, but it may be hoped that few share his unenlightened conception of the matter.—New York *Tribune*, May 16, 1916.

Society Proceedings

ASSOCIATION OF AMERICAN PHYSICIANS

Thirty-Fourth Annual Meeting, held at Washington, D. C., May 9-11, 1916

(*Concluded from page 1886*)

Blood Sugar Estimations as a Test of Carbohydrate Tolerance

DR. LOUIS V. HAMMAN, Baltimore: Frequent examinations of the blood and urine after the administration of glucose to fasting persons reveal four types of reaction: 1. Normal reaction: The blood sugar rises rapidly to a level not exceeding 0.15 per cent. From this point it again rapidly declines, the whole reaction being over in less than two hours. 2. Diabetic reaction: The blood sugar rises more slowly, but reaches a higher point, 0.2 per cent. and over. The high point is maintained for some time, and the decline occurs gradually, the whole reaction occupying three hours or longer. If the blood sugar rises above 0.175 per cent., sugar appears in the urine. 3. Renal reaction: In a small number of persons, although the blood sugar curve is in all other respects like the normal reaction, still sugar appears in the urine. In severe cases of diabetes the same low renal threshold is often found. 4. Nephritic reaction: In many cases of nephritis the blood sugar rises to a high level, often exceeding 0.2 per cent., and the blood sugar curve resembles the diabetic reaction; however, no sugar, or only a trace of sugar, appears in the urine. Studies of the blood sugar reaction after the administration of glucose and its relation to glycosuria give valuable clinical data in diabetes and other conditions.

Experimental Endocarditis: Its Production with Streptococcus Viridans of Low Virulence

DRS. H. K. DETWEILER and W. L. ROBINSON, Toronto: The cultures of *Streptococcus viridans* obtained from the blood in cases of chronic endocarditis were injected intravenously into a series of rabbits, and endocarditis was produced in a large number of cases. The necropsy findings led us to believe that this organism has a special affinity for the heart valves. The *Streptococcus viridans* obtained from the normal mouth is equally productive of heart lesions, and any grade of endocarditis may be produced by any one organism, depending on the amount injected, the number of injections, and the length of time between the first injection and the death of the animal.

Starvation Treatment of Diabetes

DRS. C. F. MARTIN and E. H. MASON, Montreal: Observations of the metabolism in a number of cases of diabetes treated by the starvation method illustrate the speed with which one may arrive at the tolerance for various foodstuffs by this method, and also that hyperglycemia is a much better criterion of the dietetic needs than is the glycosuria. Starvation, too, affects acidosis in different ways. In diabetes it was found that the blood sugar curves, with the glucose test, differ constantly from those of the normal individual.

DISCUSSION

DR. ABRAHAM JACOBI, New York: The starvation treatment of diabetes is very satisfactory to the experimental doctor, but what happens to the patient? I have seen patients with 5 or 6 per cent. of sugar go along in satisfactory health for five or ten or even twenty years. I have also seen starved patients, emaciated, suffering with cerebral anemia, complaining bitterly of other symptoms of nerve exhaustion, and now they are dead. They would not be dead if they had not been starved. Are not those living patients with glucose in the urine better off than those who died?

DR. S. J. MELTZER, New York: I know of several persons who would have lived comfortably with glucose in the urine; but who were starved, developed acidosis, which was not discovered early, and died. But they need not have died if the acidosis had been discovered. The starvation treatment ought not to be used indiscriminately, but only when the physician is on the alert for the first signs of acidosis. At

any rate, it does not do to use the words "acidosis" and "dying" as synonymous.

DR. J. VAN SLYKE, New York: The diabetic cases treated at the Rockefeller Institute are watched very carefully; some do well in acidosis, others much worse. If acidosis develops in the first fast, it may not occur in the second. But the fast is always broken as soon as acidosis is observed.

DR. M. HOWARD FUSSELL, Philadelphia: I have used the starvation treatment in a number of cases during the past year, and not all of the patients were treated in hospitals, though all have done extremely well. Some have had severe acidosis, but all came out satisfactorily and all are now as comfortable as possible.

DR. C. F. MARTIN, Montreal: I am sorry that Dr. Jacobi got the idea that I actually starved my patients; as a matter of fact they are not even hungry; they are not fasted to that extent.

Gastrohydrorrhea in Cirrhosis of the Liver Accompanied by Pyloric Stenosis

DR. MAX EINHORN, New York: A flow to the amount of from 1 to 1½ quarts a day was encountered in a patient suffering from cirrhosis of the liver accompanied by pyloric stenosis. No ascites had developed. At necropsy a typical cirrhotic liver and a pyloric tumor (cancerous) were found. The gastrohydrorrhea is explaind by a transudation process relieving the venous congestion in the stomach, and is akin to an accumulation of ascitic fluid from the intestines in cirrhosis of the liver without pyloric obstruction.

DISCUSSION

DR. H. A. CHRISTIAN, Boston: I have observed a similar condition in cirrhosis patients, both with and without ascites. I have always believed it to be a compensatory process.

DR. MAX EINHORN, New York: I have no doubt that the copious morning vomiting seen in many cases of cirrhosis and of cancer of the liver is due to failure of the portal circulation.

Effect of Exposure to Cold on Experimental Infection of the Respiratory Tract

DRS. JAMES ALEXANDER MILLER and WILLIS C. NOBLE, New York: Our experiments were carried out with rabbits inoculated with *Bacillus bovisepticus*, an organism which causes the laboratory disease in rabbits known as "snuffles." It was selected for experiment because it produces in rabbits conditions very similar to those in respiratory infections in man and because of the relative difficulty of producing pneumococcus pneumonia in rabbits. The animals were kept in a warm temperature for varying periods of time and were then inoculated by spraying the nose and throat with virulent cultures of the "snuffles" bacillus. They were then immediately chilled by exposing them to cold weather. Two series of experiments in two successive winters were carried out. The totals for the two series show that of thirty-seven experimental animals, fifteen, or 40.5 per cent., reacted to the infection, while of an equal number of controls, nine, or 24.3 per cent., reacted. The conclusion seems justified that exposure to cold after previous subjection to warm temperatures rendered rabbits somewhat more liable to infection with *B. bovisepticus*.

DISCUSSION

DR. HENRY SEWALL, Denver: Throughout life we are constantly receiving antigens which protect us if we are in training, and sensitize us if we let down the bars of hygienic indiscretions.

DR. S. J. MELTZER, New York: Experiments seeking to show the relations between exposure to cold and lung infection must all fail for the present, because the lungs are always maintained at the same temperature. But the same cannot be said of the nose and larynx; exposure to cold does cause a reaction in these parts, and we begin to sneeze or cough. These symptoms are not diseases, however; they are efforts of the body to get rid of undesirable substances. While these effects of exposure do not cause disease, they undoubtedly open the way to disease. The only way to prove the matter so far as the lungs or bronchi are concerned would require the introduction of hot or cold air through a tube to the lung or bronchus where organisms had previously been placed. This would not afford complete evidence, however.

The Expectorant Action of Ammonium Chlorid

DR. WARREN COLEMAN, New York: Observations were made on the expectoration in bronchitis before and after administration of ammonium chlorid. The sputum was subjected to chemical examination, which showed a large increase of ammonia nitrogen in sputum after the exhibition of ammonium chlorid. I took ½ grain doses of ammonium chlorid every two hours during the day (up to 7 p. m.). A distinct taste of the drug was perceptible in the sputum the next morning, but not in the saliva. Another subjective observation was that the sense of bronchial rawness and tightness in bronchitis was relieved in half an hour after taking ammonium chlorid. The explanation of this effect probably lies in the water carriage of the drug when excreted by the bronchial mucosa, the mucous membrane and secretion being softened thereby.

DISCUSSION

DR. ABRAHAM JACOBI, New York: Ammonium chlorid will do something in chronic bronchitis in which the sputum is sticky and hard to raise.

DR. S. J. MELTZER, New York: Dr. Coleman's interesting experiments do not decide the questions surrounding the expectorant action of ammonium chlorid. First, we should want a definition of expectorants; Dr. Coleman indicates that there are two kinds: secretion increasers and secretion removal helpers. The observation that a given substance is absent from a secretion is not evidence that the substance had no effect on the secretion; it may have done something in the blood. Physicians should not give up something that good clinical observers have found useful on the basis of mere experimental evidence. My observations for many years have been that ammonium chlorid does good in a "cold." It will not save a patient destined to die, but it is a good palliative remedy.

DR. JOSEPH ERLANGER, St. Louis: One could not be positive that the ammonium chlorid found in the sputum was excreted with it. What precautions were taken to see that no ammonium chlorid was retained in the mouth? Was any ammonium chlorid eliminated in the saliva?

DR. L. G. ROWNTREE, Minneapolis: At what stage in acute bronchitis does Dr. Coleman believe ammonium chlorid is indicated? Is its action central or peripheral?

DR. WARREN COLEMAN, New York: Careful examinations of both sputum and saliva were made. Only a very slight ammonia reaction was found in the saliva. As to the stage of bronchitis in which ammonium chlorid is indicated, benefit may be expected after the first few doses given as soon as the first dry rawness in the bronchi appears. The effect of the drug is probably due to its elimination by the bronchial mucosa, the water carried with it softening the secretion.

Coagulation Time in Lobar Pneumonia

DR. J. M. ANDERS and GEORGE H. MEEKER, Philadelphia: The so-called Boggs test was employed; the blood obtained by free puncture of finger tip or ear lobe. It was found that in pneumonia coagulation time is slightly shortened, the mean time being nearly two minutes. As to the cause of the shortened coagulation time in pneumonia, there is no definite evidence. It occurred to us that the rapid destruction of leukocytes in the exudate might set free much enzyme and so set up the process. Calcium is not increased in pneumonia, and therefore has no effect on the change in coagulation time.

DISCUSSION

DR. S. J. MELTZER, New York: In similar experiments I observed no increase of calcium in nonvirulent pneumonia; but there is an increase of this element in experimental virulent pneumonia. Starch pneumonia is not attended with fibrin increase.

DR. RUFUS I. COLE, New York: Douchez found that in blood obtained direct from the vein in pneumonia the fibrinogen is increased, but the coagulation time is prolonged.

Action of Certain Diuretics in Chronic Nephritis

DR. H. A. CHRISTIAN, Boston: The effects of theocin (as representing diuretics) were varying: there may be an increase or decrease of diuresis, of salt, of nitrogen; but sodium chlorid is more often increased than nitrogen, and tends to parallel water excretion. The conclusion seems justified that theocin causes an inconstant and not marked effect in acute nephritis in man. In chronic nephritis and chronic cardiorenal disease, theocin produces diuresis in inverse ratio to renal function. When diuresis is induced, it is followed by reduced renal functions, suggesting the advisability of intermittent use of diuretics. The fact that there may be diuresis without increase of nitrogen output makes questionable the use of diuretics for detoxicating purposes. In many cases with severe nephritis, diuretics are probably harmful, being followed by no diuresis, no increase of urinary ingredients, and by diminution of renal function.

DISCUSSION

DR. W. S. THAYER, Baltimore: I have noted the beneficial effect of diuretics in cardiac disease, and also the danger of the continuous use of diuretics in severe renal disease.

DR. J. M. ANDERS, Philadelphia: I have relied on saline diuretics. We should not employ diuretics unless the phenolsulphonephthalein test shows good functional capacity. To aid elimination we have been used to giving large drafts of water; was this taken into consideration in the studies?

DR. L. G. ROWNTREE, Minneapolis: Were there any observations on water alone as a diuretic?

DR. HENRY A. CHRISTIAN, Boston: The value of the phenolsulphonephthalein test will depend on whether a low output is due to chronic passive congestion or to tubular insufficiency. The influence of water was not studied; however, all of the patients were on a constant fluid intake. Water acts like other diuretics in shortening the lives of experimental nephritic animals.

Toxic Effects of Urea on Normal Individuals

DRS. A. W. HEWLETT, Q. O. GILBERT, and A. D. WICKETT, Ann Arbor, Mich.: In order to study the toxic effects of urea on man, about 100 gm. of urea were taken by mouth within a few hours. When the concentration of urea in the blood exceeded 160 mg. per hundred c.c. of blood, the subject usually complained of headache, dizziness, drowsiness, mental apathy, inability to concentrate the attention, muscular weakness and fatigue and slight muscular tremor. These symptoms are similar to those described in the asthenic types of uremia in which the blood urea approaches and often exceeds the threshold of symptoms observed in these experiments. It is probable, therefore, that in this type of uremia many of the symptoms can be attributed to the high concentration of urea in the body. In these experiments no nausea or loss of appetite occurred at the maximum level of urea in the blood, nor was there any marked rise of blood pressure.

DISCUSSION

DR. WARREN COLEMAN, New York: An instructive case was that of a girl, aged 13 years, who came to hospital in uremic convulsions. Blood taken for therapeutic purposes yielded of noncoagulable nitrogen a total of 20 mg. per hundred c.c. In later convulsions other observations never found the noncoagulable nitrogen above 30 mg. per hundred c.c. of blood. It is evident that in some cases urea is not a factor in the convulsions.

DR. HENRY A. CHRISTIAN, Boston: Dr. Hewlett's observations coincide with my own on the noneffect of diuretics on the removal of nitrogen, and of their failure to influence the symptoms of uremia. It is necessary to consider both blood accumulation of nitrogen and kidney excretion of nitrogen in these problems; storage is the factor rather than the amount in the blood. How long did it take for the level of blood urea to return to normal?

DR. CHARLES S. BOND, Richmond, Ind.: Did diuresis follow the ingestion of the urea, and how much water was taken during the experiments?

DR. A. W. HEWLETT, Ann Arbor, Mich.: It is necessary to keep in mind that more substances are concerned in uremia than urea. The time of the return of the urea level of the blood to normal was not ascertained; the observations were not continued long enough; the threshold of symptom production was passed on the down wave in six hours. Tissues were studied, and showed that tissue concentration of urea was equal to that of the blood. There was an enormous diuresis, shown to be independent of water intake in two cases.

Factors in Normal Blood Destruction

DRS. PEYTON ROUS and O. H. ROBERTSON, New York: Phagocytosis is not sufficient to account for blood destruction in man. There is a gradual disintegration of red blood cells, with removal in the liver.

The Metabolism and Treatment of Rheumatoid Arthritis

DR. RALPH PEMBERTON, Philadelphia: Fifty cases of rheumatoid arthritis were treated by curtailment of carbohydrates, with subsidence of symptoms and with exacerbations following renewed carbohydrate feeding. The restriction in diet may regulate the symptoms, whether or not focal infections are present. The diet may be supplemented by protein to the necessary requirement, and the caloric requirement brought to normal by butter and olive oil. There is a tendency of the urine to swing to alkaline with exacerbations of the disease.

Vital Capacity of the Lungs, and Its Relation to Dyspnea in Heart Disease.

DRS. FRANCIS W. PEABODY and JOHN A. WENTWORTH, Boston: The production of dyspnea in patients with heart disease depends, in part, at least, on inability to increase the minute-volume of air breathed to as great an extent as can normal persons. This is due to a decrease in the vital capacity which limits the depth of breathing. The tendency of a patient to become dyspneic on exertion varies closely with the degree of the decrease in vital capacity. The determination of the vital capacity gives an indication of the amount of exercise which will produce dyspnea, and is a guide to the severity of the functional disability of the case.

Action of Opium Alkaloids and Their Combinations on the Vomiting Center

DR. DAVID I. MACHT, Baltimore: Nausea and vomiting are the most annoying symptoms produced by opium and its derivatives. In a study of the seven principal alkaloids of opium, it was found that they could be divided into two groups: (1) morphin, which causes vomiting; (2) all the others, which produce nausea feebly. The minimal dose of morphin which produces vomiting in the dog was found to be (average) from 0.3 to 0.4 mg. per kilogram of body weight. Not only is vomiting produced by morphin, but the drug puts the vomiting center out of commission; no vomiting is induced thereafter by apomorphin. Morphin and narcotin given together produced less vomiting than smaller doses of morphin alone; moreover, the combination did not produce exhaustion of the vomiting center; the same holds true for morphin in combination with narcein, and even more remarkable effects are seen when a mixture of the total alkaloids is given; the vomiting center is not put out of commission by this preparation. The explanation of its favorable action probably lies in the molecular structure of the alkaloids. The combination of opposites reduces the tendency to provoke nausea.

Rôle of the Liver in Acute Polycythemia

DR. PAUL D. LAMSON, New York: As to the cause of the sudden increase of red cells in acute polycythemia, two theories are held: (1) that polycythemia is due to sudden diminution of blood fluid with concentration of cells, and (2) that there is a sedimentation of red cells somewhere in the body, which if stirred up will suddenly increase the red cell count. Epinephrin will cause a polycythemia in a few minutes; this reaches its height in fifteen minutes, and begins to fall in another fifteen minutes. Experiments were made to fix the liver as the source of the influx of cells. It appears that the increase of cells is not due to loss of plasma alone, but also to a sudden influx of stored cells. The liver seems to be the organ that is responsible for both factors. It is suggested that a physiologic influx of epinephrin may account for acute polycythemia, such as occurs after fright, etc.

(*Continued on page 2030*)

Marriages

LLOYD WARREN KETRON, M.D., Baltimore, to Miss Romola Cressey of Modesto, Calif., at Baltimore, May 21.

WALTER EDWIN KOPPENBRINK, M.D., St. Louis, to Miss Alice Miriam Lake of Higginsville, Mo., May 24.

RICHARD ORMOND LEAVENWORTH, M.D., Glencoe, Minn., to Miss Geneva M. Hilton of Minneapolis, June 14.

RAYMOND CLARE COLEMAN, M.D., Estherville, Iowa, to Miss Josephine Dean Smith of Minneapolis, May 24.

ELMER STANLEY BAGNALL, M.D., Roslindale, Mass., to Miss Aida H. Salmon of Boonton, N. J., June 3.

GEORGE EDWIN DEERING, M.D., to Miss Agatha Louise Small, both of Worcester, Mass., recently.

ABRAHAM SNELL PARK, M.D., Chicago, to Miss Laura Isabel Davidson of Owatonna, Minn., June 7.

FRANCIS GILMAN BLAKE, M.D., Boston, to Miss Dorothy Dewey of Springfield, Mass., June 1.

WILLIAM NELSON THOMAS, M.D., Oxford, N. C., to Miss Estelle Bullock, at Oxford, June 1.

WARREN YODER THOMPSON, M.D., to Miss Mary G. Kenworthy, both of Omaha, May 24.

CARY EGGLESTON, M.D., to Miss May Appleton Parker, both of New York City, June 3.

WALTER JOSEPH REAM, M.D., Ladd, Ill., to Miss Marie Hall of St. Paul, June 1.

Deaths

Ambrose Talbot, M.D., Kansas City, Mo.; Harvard Medical School, 1885; aged 55; a Fellow of the American Medical Association; visiting physician to St. Margaret's Hospital, Kansas City, Kan.; medical director of the Kansas City Life Insurance Company and medical referee of the National Life Insurance Company of New York; instructor in clinical medicine in the medical department of the University of Kansas; once president of the Medical Section of the American Life Convention; died in his office in Kansas City, June 1, from cerebral hemorrhage.

Edward Orlando Greer, M.D., St. Louis; Marion-Sims College of Medicine, St. Louis, 1893; aged 50; formerly a Fellow of the American Medical Association; a member of the Missouri State Medical Association; from 1907 to 1911 professor of hydrotherapy and diseases of the abdominal viscera in Barnes Medical College, St. Louis, and for a year thereafter professor of clinical medicine in the National University of Arts and Sciences, St. Louis; formerly chief of the obstetric and gynecologic clinics in his alma mater; died at his home, May 27, from nephritis.

Andrew M. Peables, M.D., Auburn, Me.; Dartmouth Medical School, Hanover, N. H., 1864; aged 80; a Fellow of the American Medical Association and vice president of the Androscoggin County Medical Association; attending physician to the Central Maine General Hospital, of which he was one of the founders; a member of the Auburn School Board and city council, and a representative in the state legislature in 1869 and 1870; president of the board of health of Auburn; a director in two local banks; died at his home, May 24.

Francis Foerster, M.D., New York City; College of Physicians and Surgeons in the City of New York, 1883; aged 61; a Fellow of the American Medical Association and New York Academy of Medicine, and of the American College of Surgeons; for ten years professor of gynecology in the New York Post-Graduate School; obstetrician and gynecologist to the German Hospital; died in that institution, June 1, after a long illness from abscess of the lung.

Edwin Alonzo Goodridge, M.D., Flushing, L. I., N. Y.; College of Physicians and Surgeons in the City of New York, 1871; aged 75; for thirty-four years a practitioner of Flushing; for five years president of the board of education and for many years trustee of the public schools; a veteran of the Civil War; at one time health officer of Flushing and surgeon to the Flushing Hospital; died at his home, May 31, from heart disease.

Thomas Elwin Murray, M.D., Great Falls, Mont.; Jefferson Medical College, 1908; aged 34; a member of the Medical Association of Montana; a registered pharmacist; health officer of Great Falls and vice president of the State Life Insurance Company of that city; who was operated on in April for relief of chronic appendicitis, died in St. Joseph's Hospital, Phoenix, Ariz., May 29, from endocarditis.

James Stenhouse, M.D., Denver; Denver College of Medicine, 1886; aged 56; head physician of the Pacific jurisdiction of the Woodmen of the World; visiting physician to the Denver City and County Hospital; founder of the People's Mission, Denver; formerly local surgeon for the Denver and Rio Grande and Union Pacific systems; died in St. Joseph's Hospital, Denver, May 24, from pneumonia.

John Evelyn Page, M.D., Santa Barbara, Calif.; University of Maryland, Baltimore, 1889; aged 49; surgeon (lieutenant-commander), U. S. Navy (retired); who entered the Navy June 18, 1890, and was retired on account of incapacity resulting from an incident of service, April 3, 1908, after seven years and eleven months' sea service and six years and eight months' shore or other duty; died May 28.

Albert Curtis Perveil, M.D., Brooklyn; New York University, New York City, 1894; aged 40; for two years surgeon of the Offin River Gold Mining Company in the Belgian Congo, West Africa; and who had been ill with sleeping sickness at his home in Brooklyn for several months; died in Roosevelt Hospital, New York City, May 31, from trypanosomiasis.

Walter John Wilson, M.D., Detroit; Detroit Medical College, 1879; aged 67; a Fellow of the American Medical Association and at one time president of the Detroit Academy of Medicine; while riding a motorcycle in Detroit, June 1, was struck by a street car and sustained a fracture of the skull from which he died in the Receiving Hospital, two hours later.

James Ferguson Vannice, Bishop Hill, Ill. (license, years of practice, Illinois, 1889); aged 76; a member of the Illinois State Medical Society; formerly a druggist; a veteran of the Civil War and a practitioner since 1867; for many years school director and clerk of the board of education of Bishop Hill; died at his home, May 25, from cerebral hemorrhage.

Charles Zeh Garside, M.D., New York City; College of Physicians and Surgeons in the City of New York, 1903; aged 37; a member of the New York Academy of Medicine, and New York Pathological Society; professor of pathology and bacteriology in Fordham University, New York City; died in the German Hospital, New York City, June 1.

Benjamin U. Jacob, M.D., Waukesha, Wis.; Northwestern University Medical School, Chicago, 1881; aged 66; formerly a Fellow of the American Medical Association; a member of the State Medical Society of Wisconsin; formerly a druggist, and physician to the Wisconsin State Industrial School for Boys; died at his home, May 28, from heart disease.

Alfred King, M.D., Portland, Me.; Medical School of Maine, Brunswick, 1886; aged 54; a Fellow of the American Medical Association and a member of the American Surgical Association, professor of surgery in his alma mater and consulting surgeon to the Maine General Hospital, Portland; died at his home, June 4, from pneumonia.

Moise Lafleur, M.D., New Orleans; Tulane University, New Orleans, 1915; aged 27; ship surgeon on the United Fruit Company's steamer *Suriname;* while engaged in scientific research work on the border between Guatemala and British Honduras, was shot and killed by Guatemalan soldiers.

Edward White Elliott, M.D., Turlock, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1897; aged 49; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of California; died at his home, May 26, from cerebral hemorrhage.

Matta Louisa Berry Longwell, M.D., Wellsboro, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1905; aged 36; a Fellow of the American Medical Association; died in the Williamsport Hospital, June 3, from acute nephritis three days after an operation for appendicitis.

Louis F. Laudick, M.D., Lima, Ohio; Medical College of Ohio, Cincinnati, 1890; aged 49; formerly a Fellow of the American Medical Association; a member of the Ohio State Medical Association; at one time health officer of Lima; died in a hospital in Toledo, May 25, from paresis.

M. H. Verpoorten, M.D., Council Bluffs, Iowa; Catholic University, Louvain, Belgium, 1874; aged 68; a Fellow of the American Medical Association; for several years a practitioner and druggist of Laramie, Wyo.; died in the Jennie Edmundson Hospital, Council Bluffs, June 2.

William Pitt Cleveland, M.D., Fargo, N. D.; Medical School of Maine, Brunswick, 1879; aged 67; said to have been the first registered medical practitioner in Dakota territory; formerly physician of Caledonia and Traill County, N. D.; died at his home, May 30.

Francis M. Rose, M.D., Los Angeles; formerly of Faribault, Minn.; Starling Medical College, Columbus, Ohio, 1860; aged 74; formerly a Fellow of the American Medical Association; a veteran of the Civil War; died at his home, May 18, from paralysis.

David C. Stinson, M.D., Sioux City, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1874; aged 66; for thirty-two years a practitioner and druggist of Dakota County, Neb.; died at his home in Sioux City, Iowa, May 25, from malignant disease.

Thomas Perrin Kennedy, M.D., Union, S. C.; Tulane University, New Orleans, 1910; aged 30; a member of the South Carolina Medical Association; a specialist on diseases of the eye, ear, nose and throat; died at the home of his father-in-law in Union, May 21.

Chapman J. French, M.D., Huntington, W. Va.; University of the South, Sewanee, Tenn., 1904; aged about 40; a member of the West Virginia State Medical Association; died suddenly at a hotel in Keenova, W. Va., May 31, from cerebral hemorrhage.

Thomas J. Partlow, M.D., Newport News, Va.; Medical College of Virginia, Richmond, 1906; aged 33; a Fellow of the American Medical Association; for three terms city health officer of Newport News; died at his home, June 1, from cerebral hemorrhage.

Charles Turner Sands, M.D., Las Cruces, N. M.; Jefferson Medical College, 1907; aged 33; a Fellow of the American Medical Association; formerly of Pittsburgh; who went to New Mexico six years ago on account of his health; died at his home, May 14.

James S. Hanson, M.D., Sandusky, Ohio; Detroit College of Medicine and Surgery, 1891; aged 47; a member of the staff of Providence Hospital, Sandusky; a director of the Columbus Mutual Life Insurance Company; died at his home, May 31.

George Morris Eckels, M.D., Mechanicsburg, Pa.; University of Pennsylvania, Philadelphia, 1885; aged 59; a member of the state legislature from Cumberland County in 1891 and 1893; a member of the borough council; died at his home, May 24.

Thomas Hamlin Strohecker, M.D., Washington, D. C.; North Carolina Medical College, Charlotte, 1902; aged 63; also a lawyer and clergyman of the Lutheran Church; died in George Washington University Hospital, Washington, D. C., June 1.

Maurice J. Carey, M.D., Cleveland; Columbus (Ohio) Medical College, 1882; aged 71; formerly a Fellow of the American Medical Association; a member of the Ohio State Medical Association; died at his home, April 17, from pneumonia.

Paul Archibald Gillespie, M.D., Winburg, South Africa; University of Toronto, Ont., 1891; formerly of Cannington, Ont.; major in the South African Expeditionary Force for some time; died at Winburg, March 24, from bubonic plague.

James Stimson, M.D., Santa Cruz, Calif.; New York University, New York City, 1854; Victoria University, Coburg, Ont., 1855; aged 83; president of the Santa Cruz County Medical Association in 1892; died at his home, May 25.

James J. Gibson, M.D., Athens, R. D. 11, Lexington, Ky.; Hospital College of Medicine, Louisville, Ky., 1889; aged 47; a Fellow of the American Medical Association; died at his home near Athens, May 28, from cerebral hemorrhage.

Thomas E. Bales, McMinnville, Tenn. (license, Tennessee, 1889); aged 54; a Fellow of the American Medical Association; for many years a practitioner of Morristown, Tenn.; died at his home, May 24, from pernicious anemia.

William Ross Lee, M.D., Los Angeles; New York University, New York City, 1890; aged 53; died in the receiving hospital, Los Angeles, May 20, from the effects of morphin, self-administered, it is believed, with suicidal intent.

Matthew John Perkins, M.D., Spearville, Kan.; Trinity Medical College, Toronto, 1903; aged 43; a member of the Kansas Medical Society; founder of the Perkins' Hospital, Spearville; died at his home in that place, June 3.

Haakon B. Christensen, M.D., Los Angeles; University of Denmark, Copenhagen, 1894; aged 35; was accidentally drowned at Venice, Calif., February 27.

Leonard G. Hain, M.D., Shillington, Pa.; Jefferson Medical College, 1893; aged 43; coroner of Berks County; also a banker; died in St. Joseph's Hospital, Reading, Pa., May 23, after an operation for appendicitis.

Samuel P. Coffman, M.D., Sugar Grove, Ky.; Louisville (Ky.) Medical College, 1886; aged 58; a member of the Kentucky State Medical Association; died at his home, February 19, from disease of the kidney.

Ellet Joseph Wagner, M.D., Battle Creek, Mich.; Long Island College, Brooklyn, 1878; aged 60; physiologic chemist to the Battle Creek Sanitarium; died in that institution, May 28, from heart disease.

Joseph Riddle Gorrell, M.D., Newton, Iowa; University of Buffalo, N. Y., 1859; aged 79; surgeon of U. S. Volunteers during the Civil War; died at the home of his daughter in Newton, about May 26.

Elizabeth Jane Wiley Corbett, M.D., New York City, formerly of San Francisco; University of Michigan, Ann Arbor, 1879; aged 82; died at the Takoma Park Sanitarium, Washington, D. C., June 4.

Almon L. Bennett, M.D., Nickerson, Kan.; formerly of Greensburg, Kan.; Eclectic Medical Institute, Cincinnati, 1889; aged 65; died at his home in Nickerson, April 24, from cerebral hemorrhage.

Edwin Wilbur Higbee, M.D., Northampton, Mass.; University of Vermont, Burlington, 1871; aged 66; for more than forty years a practitioner of Northampton, Mass.; died at his home, May 21.

Douglas Waterston, M.D., Westmount, Montreal, Que.; McGill University, Montreal, 1914; aged 26; captain in the Canadian Army Medical Corps; was killed in action in France, May 22.

Edward John Ulrich, M.D., San Jose, Calif.; Homeopathic Hospital College, Cleveland, 1871; aged 83; for several years a clergyman of the Methodist Episcopal Church; died at his home, May 31.

Philip Henry Edwards, M.D., Newark, N. J.; New York University, New York City, 1895; aged 43; a member of the Medical Society of New Jersey; died at his home, May 26, from peritonitis.

Arthur Scott Reebel, M.D., Saranac Lake, N. Y.; formerly of Youngstown, Ohio; Tufts College Medical School, Boston, 1909; aged 30; died at the home of his parents in Youngstown, May 22.

James Turner Sherman, M.D., Dorchester, Boston; New York Homeopathic Medical College, 1869; aged 67; died at the home of his daughter in Newport, R. I., June 6, from pneumonia.

George C. Werner, M.D., Norwood, Cincinnati, University of Freiburg, Germany, 1888; aged 72; a veteran of the Franco-Prussian War; died at his home, May 31, from heart disease.

George Henry Carpenter, M.D., Cumberland, Md.; University of Maryland, Baltimore, 1868; aged 73; died in the Allegany Hospital of the Sisters of Charity, Cumberland, May 24.

Otis Lee Wingate, M.D., Albuquerque, N. M.; formerly of Philadelphia; Jefferson Medical College, 1904; aged 38; died recently at his home in Philadelphia, from tuberculosis.

John Luther Duryee, M.D., Newark, N. J.; College of Physicians and Surgeons in the City of New York, 1868; aged 70; died in a sanatorium in Orange, N. J., June 1.

Fletcher Smith, Dover, Ky. (license, Kentucky State Board of Health, forty-one years of practice, 1893); aged 92; died at his home, May 18, from senile debility.

Edmund P. Thomas, M.D., Bowling Green, Ohio; Hahnemann Medical College, Chicago, 1882; aged 62; died at his home, May 18, from erysipelas.

Carlton S. Shepard, M.D., Omaha; Rush Medical College, 1881; aged 64; was killed in an automobile accident near Red Willow, Alta., May 24.

Charles Jefferson Stovall, M.D., Bowling Green, Ky.; Kentucky School of Medicine, Louisville, 1891; aged 61; died at his home, May 25.

James Francis Costello, M.D., Wollaston, Mass.; Tufts College Medical School, Boston, 1913; aged 26; died at his home, May 23.

Arthur E. Dawson, M.D., Jersey, Tenn.; Chattanooga (Tenn.) Medical College, 1904; aged 36; died at his home, May 24.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE WINE OF CARDUI SUIT

(*Continued from page 1879*)

May 9, 1916, Afternoon

TESTIMONY OF DR. T. SOLLMANN (*continued*)

The Court met pursuant to adjournment. Dr. Torald Sollmann resumed the stand for the defendants.

DIRECT EXAMINATION BY MR. T. J. SCOFIELD (*continued*)

VALUE OF ANIMAL EXPERIMENTATION

Q.—Doctor, you stated that a second method of the investigation of preparations such as Wine of Cardui is by animal experimentation. Now, will you please explain to the jury what you mean by that, and what the value of animal experimentation is in such an investigation? *A.*—Experiments on the animals enable one to—

Q.—Doctor, may I interrupt you just a moment to warn you to keep your voice up, so that we can all hear. *A.*—Experiments on animals enable one to obtain definite information by methods that can be exactly controlled and that are not open to the same sources of error as are clinical experiments or clinical observations. Whilst, of course, the clinical test is the final test of the value of a medicine itself, in order to be safe, it has to be supplemented—or, better, preceded by experiments on animals that avoid, as I say, the errors that are very difficult to avoid in clinical experimentation—or clinical observation.

Q.—Now, doctor, can you illustrate this to the jury in any way? *A.*—Yes. In the scientific subjects one is only applying the same sort of reasoning, of course, that one applies in ordinary life. The field of that reasoning is a little different, but that is the only difference. The same sort of reasoning applies in the scientific fields of investigation as it does in every day affairs.

Now, one example that occurs to me in this connection, that illustrates very well the difference between the laboratory test and the clinical test, is the way in which the germinating quality of the seed corn can be tested. If a farmer buys some seed corn and sows it out in the field, and the corn comes up and he cultivates it and he harvests the crop, of course, he knows that was corn that was sufficiently good—the seed was sufficiently good.

That is one way of testing the quality of the corn. And it is rather a wasteful way, and it takes a long time, and it is not absolutely certain, because, if the corn should not come up it might not be the fault of the seed at all; the weather might be bad; it might have rotted in the ground; or some animals might have eaten it up; almost anything might have happened.

So that, whilst, to a certain extent, under certain circumstances, that field test which corresponds to the clinical test is a good test, under other conditions it is not.

Now, there is another way in which the quality of the seed can be tested, and that is to put it on a plate with a little water, behind a stove, and see, after two or three days, whether it has sprouted. Now, that corresponds to the laboratory test. You are subjecting this corn to rather artificial conditions, and not exactly the conditions under which you are going to use it in the field, but simpler conditions; conditions that you can control.

If you are doing the test on the plate, in the first place you know definitely whether that seed is a good germinating seed or not. If it has not germinated there, it would not be the fault of any crows or any bad weather—it was the fault of the seed, and nothing else.

Then again, the test is very much quicker. You don't have to sow it in the field, and if it does not come up, lose your whole season's work. It can be done inside of a very few days. Why? Because the conditions for the test are so much more favorable than they are in the field test. Therefore, if you are wise, you will make that test first, if you have any doubts as to the quality of that seed, if you bought it promiscuously—you will first make the seed test before you put it in the field.

Now, that is exactly the case with the laboratory experiments. The laboratory experiments bear exactly the same relation; they are quicker; they are more certain; they are more certain, because you are controlling, and you know you are controlling the conditions. You can watch that corn all the time. You cannot watch what is happening to it after you put it in the ground; you cannot see it.

Then there is another similarity between the two tests and the clinical experiments. That in your plate test—

Mr. Hough:—In your what?

The Witness:—In the plate test, when you put the seed on the plate.

Mr. Hough:—Plate?

The Witness:—Yes. If, in the plate test, that seed does not come up, then you are perfectly sure that the seed is not worth while planting; it is not any good; you can be absolutely sure of that.

Now, it is just the same here. If you make, under proper conditions, animal experiments, and you find that the drug has no action on the animals, you can be perfectly sure that it has not any action on the human, and that really—I mean clinically—and that really, it is not worth while trying it clinically.

Further, if you find that your seed germinates, that does not necessarily mean that you will have a good crop. That is not the only thing that is required to produce a good crop. You can put that in the ground—it may sprout, possibly—and then freezing weather may come in and your corn is cut off. So, simply the fact that you get a result in your laboratory test — in your plate test, does not mean that you will get a good result from the corn, if you plant it.

It is just the same in animal experiments. You may find that a drug has an action in an animal experiment. That does not necessarily mean that that would be a useful drug clinically. That depends on other conditions. It depends especially upon whether the clinical condition—condition of the patient demands that kind of an action. You can see there is that action. You can produce it under certain suitable conditions; but it does not mean it is a useful drug, because you may not want that action—very often you don't.

I think that is perhaps as well as I can make an illustration of the correspondence between the two.

ERRORS OF CLINICAL TRIAL

Mr. T. J. Scofield: *Q.*—Doctor, as I understand you, it may or may not be that clinical trials are sometimes subject to error. Now, will you explain that to the jury, or explain what these possible errors are? *A.*—Yes. Every physician recognizes clearly that his clinical experience has limitations, and the conclusions to be drawn from them also have their limitations. That has been known since the oldest times in medicine. The beautiful Hippocratean oath that was administered by Hippocrates at the beginning of medical history states that "Experience is fallacious and judgment is difficult."

He stated that, because he was an accurate, discriminating, clinical observer. He observed as well as anybody could observe with the means that were possible at that date. He was one of the best observers that has ever been in medicine. And that was the result — that was the conclusion that he arrived at from his clinical experience.

Now, the reason why he arrived at this conclusion was this — there are several reasons, in fact. The first is that the course of a disease is uncertain. In many cases you cannot predict how the patient will be the next day; and, if you cannot predict how the patient will be the next day — if he is different tomorrow from what he was today, and you have done something in the meanwhile, you do not know necessarily that that was due to what you did, or due to change in the patient himself. In other words, the fact that you give a drug to a patient, and that a certain result follows in a given time, does not necessarily mean that that result was due to that drug that you gave. It might have been due to something entirely different.

Now, let me give you an illustration of that. Take pneumonia. Pneumonia is a disease that runs a perfectly definite course. We know that. A patient gets a high fever; gets sometimes out of his head; he gets worse and worse for about for or five days. At the end of that five days a sudden change occurs; he either dies, or he gets well by himself, practically without any treatment. Before people fully realized that — they now know it, most of them, well enough — but before they realized that, they used to be giving all kinds of drugs in the treatment of pneumonia, drugs and other things, baths, and all sorts of things. They would give those, and the patient would go on, and after the five days, a certain number would get well, and a great many people attributed that to this drug, or that, or something else.

It has been now shown, had they left those patients strictly alone, they would have gone through exactly the same course of events. It simply shows what the natural course of the disease is. Now, in the case of pneumonia, we know that well enough now. That is one of the few diseases — many infectious diseases are the same way, they run an absolutely definite course, and we know what is going to happen. Take a patient who is bleeding from a large artery. Suppose you cut the artery in the hand and let the patient bleed. Now, one of two things is going to happen, and you don't know which it is; either the patient will bleed, or the bleeding will stop; it will be one or the other eventually. You give a drug between the times, and the patient stops bleeding, but you cannot tell from that that it was the action of the drug. He might have stopped anyhow — or he must have bled to death.

Now, all those things are along that same line. Now, that is one great source of error — I should say the most frequent source of error, that a man, physician or patient, or the laity — if they are sick, they use a drug, and if they get well, they conclude from that that they got well because they took that medicine. That may be so, but it need not be so. It takes more accurate, more careful methods of observation that will definitely fix the drug as the thing which did the trick—did the business.

Another difficulty in the — a source of error in clinical observation is the effect of suggestion. Now, a man or a woman differs from animals in the fact that they reason — at least they have very much more reason — and therefore they can be made to imagine things; and, if those things are sufficiently impressed on their imagination, they are very likely to happen.

If you take an individual who has been sleepless, and has not slept well for some time, and you tell him very emphatically, "That is all right, I know the reason for all that; to-night I know those reasons are going to be removed, and you are going to go to sleep to-night all right and will have a sound sleep,"— very likely he will have that sound sleep, no matter what else you do. If an individual has a pain, and you can only convince him, distract his attention from that pain, by occupying it with something else, that pain will disappear. Everybody knows the old trick of biting the bullet when you have pain. Now, the bullet has no effect on that pain. It does not remove the pain, it distracts the attention.

Now, all that sort of thing comes in when one gives a drug to the patient. The effect may be due simply to suggestion. That has to be guarded against. That is very difficult.

Another source of error is that very often that several things are varying in the treatment. The physician prescribes a drug, and together with the drug he prescribes a lot of other things. He tells the patient to go to bed, to remain quiet, to eat certain food and not eat certain food. Sometimes he gives them a mixture of medicines. Now, when all these things come together, of course, it is impossible practically to tell by ordinary observation what part the drug may have played in the effect, and what part it may not have played in the effect.

Now, all these sources of error — and there are some more that I do not think of at the moment — now, all these sources of error can be, to a large extent, counteracted or prevented by very careful, discriminating observation; observation that goes down into every detail, and which makes the conditions just as constant as they possibly can be; methods of observation that practically can only be carried out in hospitals, where the means of observation are such as will allow of that kind of experimentation.

But the ordinary observation is exposed to large sources of error, which must be taken into account when one draws any conclusion from them, and which do not occur in animal experiments; because, in animal experiments, in the first place, you are working for a short time, and you know that in that time, if the experiment is properly conducted, no spontaneous changes occur, and the animal's condition is absolutely constant. The only variation that occurs there is the introduction of the drug.

Therefore, since that is the only change that occurs — if a change occurs — in the animal, it must have been due to that drug, and cannot have been due to anything else.

Then in animals, again, you can introduce very much larger doses than you can in the human. Therefore, an effect which is so slight in the human that you cannot be sure it is an effect — so slight that you cannot decide "Did something really happen, or didn't it happen?" In animals you can use enough so that you can be sure that something happens. If nothing happens with these large doses, certainly nothing could have happened with the small doses.

Further, in animals, besides excluding the element of suggestion I have already mentioned, you can introduce a drug in a better way. You can introduce it, if necessary, directly into the tissue, where it will act. Now, if you give a drug to a human individual, it may happen that that drug is not absorbed at all. It has first to be absorbed. It has to go through all the tissues, and part of it is excreted in that time. You do not know, unless you can determine it directly, how much of that drug will reach any given organ.

Now, if you can take an animal, or under certain conditions, a human individual — but you cannot do it as often with humans as you can with animals — and introduce that drug directly into the circulation, or, still better, into the organ that you are studying, you know it is there, and it is there in the doses — the best concentration — the largest and most favorable condition that you can possibly place that drug in for the effect.

There is still another reason why animal experimentations are in certain directions superior. Often you cannot be sure of the action of a drug because it produces several actions at the same time. It acts on different things, and those different things interact, and you get a very complicated picture, out of which you can get but very little. In such a case, to know that an action occurs, or, still more, to know what that action is, you have got to separate out the tissues, and to do that, you have to do physiological procedures, operations, etc., that you can do perfectly well on an anesthetized animal, but that, of course, you could not do on a human individual.

In order to understand the action of a drug, the mechanism of the action of a drug, in other words, in order to really investigate the drug, you must use animal experiments.

That, I think, covers the substance of your question.

RELATION OF RESULTS ON ANIMAL TO EFFECTS IN HUMAN

Q.—Now, Doctor, can the results of animal experimentation be transferred to the human being? *A.*—Yes, they can. If the structure and the functions of the animal are the same as that of the human in the respects which you are investigating — if they are the same as in the human, the results can be transferred directly to the human, except, of course, the matter of dosage which differs in different animals, and differs as far as — so far as the effect, the action is concerned, that can be transferred directly, if the structure and the function of the organs are the same. If they are not the same, of course, one has to choose a suitable animal that has the same structure or function, or one has to take a larger series of animals, etc. It can be transferred either directly or indirectly, and if the function and structures are the same, they can be transferred directly from the animal to the human.

Q.—Doctor, are the actions of drugs the same in health and in disease? *A.*—Yes, the actions of drugs are the same in health as they are in disease. The effects, of course, may be different. They differ to some extent with conditions, the conditions that the action of the drug encounters — the actions are the same.

Q.—If a drug has no action on the normal animal, can it have any action, or does it have any action on the human disease, or any effect on human disease? *A.*—An instance in which a drug has no action on the healthy animals and has an action, demonstrable action, definite action, on the human, is not known. No such instance is known; and, furthermore, it is not only unknown, but it is inconceivable.

Q.—Why is it inconceivable? *A.*—Drugs act by affecting the chemical components of the body. That is the way in which drugs finally act. Now, the chemical components of the body are so nearly related in animals and in men, in health and in disease, that it is just as inconceivable—just as impossible to conceive that a drug would act in the one case and have no action at all in the other case, as it is impossible to conceive that fire would burn pine wood and would not burn oak wood. It does not burn them with the same velocity. They don't burn as quickly, one as the other, but they both burn. They don't burn as fast, because their chemical structure, and their physical structure is a little different; but they both burn, because their chemical structure is alike. The drug acts on the body essentially in the same way as the fire acts on the wood. Now, you can take your oak wood or your pine wood, and you can let it rot, then it is still there—it will still burn. There is no difference in that; the action is the same; and it is just as impossible to conceive of the one as it is to conceive of the other.

BY MOUTH OR BY INJECTION

Q.—Doctor, is there any drug which produces an effect or action when given by the mouth, which does not produce an effect when injected directly into the tissues? *A.*—There is no soluble drug which has that characteristic, namely, that it produces—that is the question —it produces an action when taken by mouth and not an action when it is injected into the system. That also is inconceivable, because, when you inject a drug into the system, it comes directly into contact with the tissues, much more directly than when you take it by mouth; when, in the first place, it slowly absorbs, instead of entering quickly, and, in the second place, it is excreted all the time. You never get as much at the time in the tissues.

My answer was—the question, as I understand it—was any action on the system. Of course, a drug will produce an action in the alimentary canal better when it is given by mouth, when it comes in contact with the alimentary canal, than when it is injected into the system. That is a local action. But an action on the system—you cannot conceive of it being easier to produce that, when the drug is given by mouth, than when it is injected into the system—speaking of soluble drugs.

Now, if you take the case of insoluble drugs, the condition may be different. Certain drugs may require for their solution that they should be digested, as it were. Then, of course, that is a different thing altogether. Then they will not act unless they are digested. But substances that are soluble will invariably, almost invariably, produce a greater action, or better action, if they are injected directly into the system, than when they are introduced indirectly by way of the alimentary canal.

Q.—Now, Doctor, Wine of Cardui is sold as a female remedy; claimed to be a female tonic; a uterine tonic acting on the portal system; acting on the womanly organs, just as a kidney remedy acts on the kidneys; curative in all sorts of menstrual disturbances; displacements of the uterus; inflammations of the uterus; gonorrheal vaginitis; sterility. Will you explain, if you have an opinion on the subject, how animal experimentation might throw any light on these claims? *A.*—These claims relate entirely to the female generative organs. They presuppose, as you state them, an action on the uterus. Now, effects on the uterus can be very well investigated in animals, perfectly well; and they—

Q.—Well, Doctor — go ahead. Answer. *A.*—They can be investigated, in the first place, by an action of the blood supply on the uterus or an action of the contractions of the uterus; all these claims practically come back to those two things, an action either on the blood supply or on the contractions of the uterus, and both these things can be perfectly well investigated in animals, with very definite results, or absence of results, as the case may be.

Q.—Well, what bearing has the blood supply of the uterus on these claims? *A.*—The blood supply of the uterus determines the blood flow to the uterus; and, therefore, would very markedly influence such female disturbances as amenorrhea, and menorrhagia and metrorrhagia. All these would be influenced, and would, to a certain degree, depend upon the blood supply of the uterus.

Q.—How may the blood supply of the uterus be varied, and how can this be shown by animal experimentation? *A.*—The blood supply of the uterus may be varied in several different ways. It may be varied in the first place by an action on the blood vessels, either directly on the blood vessels or through the central nervous system. That can be determined by the blood pressure and also by the color of the uterus. The more blood there is flowing through the uterus, the deeper the color of the uterus.

The second way in which the blood supply of the uterus may be affected is somewhat indirectly, through congestion of the intestines and perhaps also through congestion of the portal circulation, that is to say, the circulation of the liver. In intestinal congestion, or portal congestion, any such congestion would also be shown definitely by changes in the blood pressure and by changes in the color of the intestines.

Furthermore anything or most things or many things that alter the blood supply of the intestines do so by irritating the intestines and that means that the intestines will move more, so by watching the intestines, one obtains further light on that subject.

Another way in which the drug may act or influence the blood supply of the uterus is by acting on the muscles of the uterus itself — the uterus itself. The uterus is a muscular organ and consists of what is called smooth muscles or muscular fibers and between these fibers, or certain ones of these fibers, run the blood vessels.

If these fibers contract together that compresses the blood vessels and that is the way in which ergot acts after childbirth. When the uterus is large and the woman is bleeding a good deal, all you have to do to stop the bleeding is to contract the uterus down so that the fibers press on the blood vessels and squeeze them together.

Now, an action of that kind would be shown by increased contraction of the uterus. The contractions of the uterus can be increased.

That also can be very imminently and easily shown by animal experiments.

Q.—Now then, doctor, assume it to be a fact that Wine of Cardui has no effect on the blood pressure, even when it is injected into a vein in large doses. Assume further that neither Wine of Cardui nor viburnum prunifolium, the bark of the stem or of the root, has any effect on the blood pressure, nor on the uterine contractions, the color, nor on the intestinal contractions or color.

Assume further that Wine of Cardui, viburnum prunifolium and carduus benedictus and marianus have no effect on the contractions of the excised human uterus; both the alcoholic and the evaporated preparations being used.

Assume further that in the animal experiments the drugs were given by mouth, under the skin, and into the intestines.

Assume further that Wine of Cardui, when injected into the human uterus in the living subject, produces no effects of any kind.

With these assumptions in your mind, have you an opinion as to the effect of Wine of Cardui in menstrual disorders? *A.*—Yes, I have an opinion.

Q.—Wine of Cardui and the other drugs which I have named. Have you an opinion? *A.*—You have in your question covered all the ways in which I can imagine a drug as affecting the blood flow of the uterus. You have in your question given these not only in the best possible method, but you have also given them by practically many essential modifications of the method or kinds of methods of administration.

You state that under those conditions, it produced no effects of any kind in any of these contractions. The only conclusion that I can draw from that is that it would not affect the menstrual flow.

Q.—Could it be possible in your opinion that a drug might act on the blood flow in diseased conditions of the human being and have no effect on healthy animals? *A.*—No, that is quite inconceivable. The structure and functions, and the distribution of the blood vessels are the same in the human and in animals, and therefore it would be quite impossible to make such an assumption.

MENSTRUAL DISORDERS

Q.—Doctor, are there any other ways in which a remedy might affect menstrual disorders than acting on the blood supply of the uterus? *A.*—Oh, yes. It might act upon the cause of those disorders.

Q.—Now, when you say the cause of the disorders, do you mean the cause which produces the trouble or disorders? *A.*—Yes, take tuberculosis, and that sort of thing, anemia.

Q.—Now, Doctor, would tonics be of any value in menstrual disorders? *A.*—So far as the menstrual disorder proper is concerned, they would be of no direct value. They might be of some use after the cause of the disorder has been removed. They might be of some use then by hastening the recovery of the patient, restoring her perhaps somewhat more rapidly in her general health. But, so far as the menstrual condition is concerned, they would have no effect on the menstrual disorders in the way in which I have mentioned here.

Q.—What is meant by tonic? *A.*—A tonic is a measure that increases the nutrition and vigor of the body at large. If you are using the term simply as a tonic, that is what it does.

As a matter of fact, the word "tonic" is used in two quite different ways, according to whether you speak of the body at large, or of a muscular organ in particular.

The meaning when we speak of a general tonic, or a tonic without qualification, is the definition that I just gave; something that increases the health and vigor of the body at large. The best example of that, to make my meaning clear, clearer than anything else, the best typical tonics are proper rest and exercise, proper food, outdoor air, sunshine and things of that kind, and, when they are indicated, such drugs as iron and arsenic. That is what we mean by a general tonic.

Now, in the case of a muscular organ, when we speak of a tonic acting on a muscular organ particularly, then we mean a drug that produces increased contraction of that muscle. For instance, a heart tonic would be a tonic that increases and strengthens the contractions of the heart. A uterine tonic, that is a muscular organ, would be a drug that strengthens the contractions of the uterus. There are those distinct two meanings, a general tonic and a muscular tonic.

BITTERS

Q.—Doctor, are carduus benedictus and viburnum prunifolium tonics? *A.*—Both of those drugs are bitters, and bitter substances generally are believed by some to act under certain conditions as tonics by improving the appetite and improving digestion.

Q.—Are the bitters contained in carduus benedictus and viburnum prunifolium superior to other bitters? *A.*—Whatever action is produced by bitters in that way, is owing solely to their bitter taste and only to their bitter taste. Therefore, one bitter is no better than another bitter. The only point is, are they bitter or are they not bitter? One bitter is as good as any other.

Q.—How do the bitter substances act as tonics, in what way? *A.*—That is not accurately known, and in fact there is considerable reason to doubt whether they do act in that way, or whether they don't act in that way. They have had a good deal of — considerable reputation since the oldest days of medicine, and before that probably, for improving the appetite and improving digestion and in that way, indirectly, improving the nutrition.

Q.—Is there any scientific evidence for such action, doctor? *A.*—Experiments have been made quite extensively to determine whether that action is possible, that action that is popularly assumed and stated to exist — whether it actually exists.

There has been a great deal of difference of opinion as to whether it actually exists or not, and a great deal of experimentation has been done about it.

The earlier literature in regard to that, the earlier statements and the earlier experiments generally are rather contradictory on that point. The latest work that has been done upon it — the earlier works, some say that they have and some not.

The latest work that has been done on that subject is by far the best that has been done. It shows conclusively, to my mind at least, that the bitters have no effect in increasing the appetite or increasing the digestion or any functions of digestion in normal animals or in normal man.

Therefore, if the actions occur at all, they must occur only under special conditions and those conditions have not been investigated.

There has been only one piece of work done on that particular subject and that has been done on extremely anemic animals, animals that were bled several times and reduced to a degree of extreme anemia. Those animals, when they received bitters, did show a slight effect. Their appetite did not become normal or anything like normal. Their digestion did not become normal or anything like normal, but it did improve a very very little.

Now that is the only positive evidence for the value of such tonics taking all the work into consideration, I mean the only one that is really conclusive work.

Now, as to how they act, as I said before, every one is agreed that the action is simply through or is connected with the bitter taste in some way or other if it occurs at all.

I have always thought that one possibility of the contradictory results was this; it is a peculiar fact that everybody has observed who has paid any attention to bitter tonics, it is a peculiar fact that they only act when they are taken half an hour or so before meals. If they are taken at any old time in the day, they do not act as tonics. Nobody has claimed that they act as tonics then. Everybody who has any acquaintance with the subject says that they must be taken at that particular time.

Now, it has always appeared to me that one possible explanation of the thing was this: the function of the stomach depends to a great extent upon one's eagerness to receive food. If you simply suggest to an individual, or even an animal by showing it meat (a dog for instance) that he is going to be fed, then his digestive juices begin to flow.

Now, it seemed to me that probably the action of the bitters simply consisted in sort of a bitter dinner bell. The suggestion is that bitter and half an hour after that, he knows he is going to get his dinner and under those circumstances the chemical juices start to flowing just as if you hold a piece of meat before a dog and the dog knows that in half an hour from that he is going to get his meal. If you do that with a dog, if you show him the meat and he is accustomed to it, that means to him that pretty soon it is feeding time, and then his juices begin to flow. Now, I rather think that that is the way the bitters act, but there is no positive work on that subject.

Q.—Then it is your opinion, if I understand you, that a medicinal solution directed to be taken three or four times a day, without reference to meals, would not be a bitter tonic? *A.*—Not unless it happened to be taken by accident at this particular time, and it must be taken regularly. That is another thing about tonics, they must be taken regularly. If they are going to produce any action, you must train your patient to accept that fact.

UTERINE TONICS

Q.—What is your opinion, Doctor as to the value of bitters as tonics in uterine displacements and disorders, or uterine diseases, I should say? *A.*—They would have no effect on the uterine disease as such, of course.

Q.—You spoke of the investigation of uterine movements. What light would they throw upon the value of a preparation that is claimed to be a uterine tonic to take in the slack of the muscles and nerves and have a sedative action on the uterus and act upon the womb itself to help pull up and replace the womb in its proper position? *A.*—The claims that you state there appear pretty inclusive, and it would be pretty difficult to imagine a drug that would have all of those actions at the same time. But if any of those actions did exist, they could undoubtedly be shown definitely by experiments on animals in which the uterine movements can be directly watched and recorded.

Q.—Doctor, define what you mean by a uterine tonic, stimulant and sedative? *A.*—A uterine tonic is a drug that contracts the uterus down, causes it to go into a more tonic state, as it is called, makes it more firm, makes the muscle contract more firmly.

A uterine stimulant is one that increases or heightens the contractions, the contractions go up and down, and it will go up higher and perhaps make them more frequent. It increases the individual contractions, whereas the tonic has more or less permanent reactions.

A uterine sedative or uterine depressant, as it is sometimes called, weakens the contractions of the uterus, so that instead of being this way, they will be only slight, or only very slow. (The witness apparently indicates with his hand without the sight of the reporter.)

Q.—Are the contractions of the uterus susceptible to the action of drugs? *A.*—Oh, very strongly so, yes.

Q.—How can these actions be investigated? *A.*—They can be best investigated on the animals. One can take a living animal, anesthetize it of course, and under a bath of warm saline solution, so that it does not get irritated by the air, attach a thread to one end of the uterus and let that go up to a lever and tie it to one end, and each contraction of the uterus will move that lever and make it write on the recording surface of a cylinder that revolves. That is one way.

Another way one can get a uterus right out of the body and suspend it in a saline solution that is kept warm and is supplied with oxygen and then tie it to a lever and it will write.

That can be done on the human uterus, uteri that have been removed by operation, for instance, as well as on the uteri of animals.

Any of these ways will give a very definite tracing. The uterus itself is made to record. Nobody is doing anything and it is made to record its own movements. It does that itself and there records them itself so that the observer or operator does not enter into the thing at all directly.

Q.—Is the uterus that is excised and taken out of the living subject alive after it is taken out? *A.*—Yes, as is shown by its contractions. Dead things don't move. It is just as alive as a rain worm when you cut off the head and it goes on wriggling, just as much alive.

Q.—Will an excised uterus, a uterus that has been removed from the body, actively respond to the drugs that act clinically on uterine movements? *A.*—All the drugs that are known to affect definitely the uterine movements clinically, do produce striking changes in the contraction of the animal uterus after it has been excised, under any of these methods that I have named.

Q.—Well now, doctor, let me ask you whether or not the uterus is alike in animals and in human beings? *A.*—The structure is the same, the functions are the same, the nerve supply is generally the same and the blood supply is the same. They are the same in every respect except the size and the shape.

EFFECT OF DRUGS ON UTERINE CONTRACTIONS

Q.—Have you made any experiments yourself on the effect of drugs on the uterine contractions? *A.*—Yes, sir.

Q.—What experiments have you made with Wine of Cardui, and the fluidextract of carduus benedictus, if any? *A.*—I have made a series of experiments on the excised uterus of a guinea-pig and also a series of experiments on the excised human uterus, both with Wine of Cardui, and with fluidextract of cnicus benedictus. The fluidextract of cnicus benedictus — I used two samples. One was prepared from the drug by the chemical laboratory of the American Medical Association, and the other was the extract marketed by Eli Lilly & Company, the fluidextract of Eli Lilly & Company.

Q.—Were the uteri that were used in those experiments normal? *A.*—I used three human uteri in these particular experiments. One of these was from a case of cancer. The other two uteri were normal in their structure. They had been removed on account of displacements, but their structure was normal.

Q.—How about the animals that you experimented on, if you experimented on animal uteri? *A.*—The guinea-pig uteri were strictly normal.

Q.—Well, did the different uteri and the uterus of the guinea-pig —or the uteri, as it may have been—I don't know whether you said one or more. *A.*—Several.

Q.—Did they react alike or not? *A.*—They reacted exactly the same way, yes. I will leave it that way for the present.

Q.—What was the effect produced by the use of Wine of Cardui in that way? *A.*—The Wine of Cardui I employed in concentration, adding it to the saline solution that was around the muscle in large quantities as compared with the volume of the muscle, I used that in concentration ranging from one part of Wine of Cardui to 1,500 of the solution, and strengthened that in different experiments so I got one part of Wine of Cardui to thirty in some of the experiments of the solution. In those various concentrations — that last concentration is much higher than anything you can conceive of, occurring in the actual body—in all of these experiments there was absolutely no effect on the contraction of the uterus, either in the guinea-pig or in the human.

Q.—Now, what result did you obtain with the fluidextract of carduus benedictus? *A.*—The fluidextract of carduus benedictus, I used somewhat the same concentration. I used it in the proportion of one to 1,500 up to a concentration of one to sixty-seven, that is, one part of the drug to sixty-seven of the saline. There was absolutely no effect.

From one to sixty-seven on to one to thirty-three, if you get above the concentration of one to sixty-seven, then you get a progressive depression of the movements, which was undoubtedly due to the alcohol in the fluidextract. A concentration of one to thirty-three would make about 2 per cent. of absolute alcohol in the solution directly in contact with the drug and permanently in contact with it and such a concentration undoubtedly depresses the contraction of the uterus, being in contact with it.

Q.—Doctor, did you make any tracings of these experiments? *A.*—Yes sir, I have some typical tracings with me that will illustrate the matter.

Q.—Have you got them with you there? *A.*—I have them with me, yes.

Q.—I wish you would produce them, doctor. (Papers produced.) These are made by you? *A.*—Those were made by me, yes, sir.

Mr. T. J. Scofield:—Mr. Reporter mark these Defendants' Exhibits 73 and 74.

(Papers marked as indicated.)

Q.—Doctor, will you take these and explain—

Mr. Hough:—Let me look at them for a moment.

Mr. T. J. Scofield:—Yes, this is the first one.

Q.—Doctor, I hand you now these exhibits, marked respectively 73 and 74. Will you indicate to the jury or explain what those lines indicate? Explain the tracing, so that they may understand the exhibits. *A.* (Exhibiting papers to jury.)—This first wave line here represents the contractions of the normal human uterus excised.

Mr. Walker:—Are you using 73? *A.*—73, yes. That was the Wine of Cardui itself. This wavy line on each of these tracings indicates the contractions of the uterus. (Indicating on tracing without the sight of the reporter.) Now, at this point here Wine of Cardui was introduced in a concentration of one to 150 and you see this contraction go on, there is no change. Here the concentration was strengthened to one part to fifty, one part to fifty and still the contractions go on without any change. Here it was increased to one to thirty, and you see these waves are still present, no stronger and no weaker, nor faster nor slower, just exactly the same.

Mr. T. J. Scofield:—Now, that Exhibit 73 represents experiments with what? *A.*—Wine of Cardui, and the human uterus.

Q.—Wine of Cardui on the human uterus? *A.*—Yes sir. Shall I exhibit 74 now?

Q.—If the gentlemen are satisfied with that.

The Witness:—The point is that the waves that are shown on this tracing, which are the normal contraction waves, are not changed at all by putting in the drugs. They continue just as they were before. Now, here is the same uterus—

THE COURT:—You are using what?

Mr. T. J. Scofield:—Wait till we get through with this one. Now Doctor, will you take Exhibit 74? Judge, do you care to look at that? What is that Exhibit 74? *A.*—Exhibit 74 shows the effect of the fluidextract of carduus benedictus on the same uterus.

Q.—Explain it to the jury. *A.*—The same uterus left in the same solution. That is to say, the Wine of Cardui was left in, and then, so that it could still act — this fluidextract of carduus benedictus was added to that. You see those waves are still the same. At that point the fluidextract of carduus benedictus, the Lilly kind was added, one to 150 and it still goes on, no change. At that point (indicating on tracing without sight of the reporter) some more was added so as to make a total of 1:67 and it still goes on without any change. Now, after that there is one normal contraction, but then it gets weaker and here we put in a little more so as to make a total of one to thirty-three, added more to it and there the contraction disappeared, ceased altogether.

Mr. Hough:—I suggest that he just pass that around among the jury, and testify so that everybody can hear.

Mr. T. J. Scofield:—He has a right to explain it.

THE COURT:—Just so long as the reporter gets it all.

Mr. Hough:—And so that all the jury can see.

Mr. T. J. Scofield:—Doctor, you spoke of the Lilly kind. What did you mean by that, a preparation from the Lilly Laboratories? *A.*—Yes, sir; fluidextract prepared by the firm of Eli Lilly & Company.

Mr. T. J. Scofield:—If the Court please, I offer Exhibit 73 in evidence, and I also offer Exhibit 74 in evidence. They are admitted are they, your Honor?

THE COURT:—I think they were pretty effectually in before they were offered.

Mr. T. J. Scofield:—I thought so, but at the same time I do not want any question about that.

Mr. Williams:—Oh, we agree to it.

Mr. Hough:—For what it is worth.

Mr. T. J. Scofield:—You explained how these tracings were made, didn't you? *A.*—Yes sir, I think so.

Q.—In a question which I asked you some time ago, I described to you the results obtained in certain other experiments with Wine of Cardui, carduus benedictus, carduus marianus, viburnum prunifolium (the bark of the stem and of the root), in the form of fluidextracts or solutions in 20 per cent. of alcohol and evaporated solutions taken up in water. Do you still have these results in mind? *A.*—Yes.

Q.—Now, from those results, together with your own experiments, have you an opinion as to whether any of these drugs that I have named have a tonic action or a sedative action, or any other action on the uterus? *A.*—They all agree in showing that there is no tonic action, no sedative action and no form of action on the uterus, or uterine contractions under any conditions.

Q.—Have you an opinion as to whether Wine of Cardui could have any effect on the uterus when used according to directions, namely a tablespoonful three or four times a day? *A.*—I have an opinion.

Q.—What is the opinion? *A.*—That it could have no effect whatever.

Q.—Why? *A.*—Because the conditions that you named, if it is actually used according to directions, would not be nearly as favorable to producing an action as the experiments that you described, and the experiments that I explained. So that if there was no effect under these extremely favorable conditions, under the conditions of the directions, a tablespoonful three or four times a day to a woman, it could not have any effect.

Q.—Could these drugs, doctor, increase the nutrition of the uterus without increasing the uterine contractions? *A.*—No. The nutrition of a muscular organ is increased by drugs only by exercising the muscle of that organ; but throwing it into contractions, the muscle of the uterus or of the part—it is just like any other muscle. You cannot very much increase the nutrition of your biceps muscle and make it bigger and stronger, except in one way, and that is by exercising it and making it contract more. It is exactly the same way with the muscle of the uterus or the heart. The only way you can improve its nutrition is to make it contract more, by drugs.

Q.—Could a uterine tonic or any drug replace a displaced uterus? *A.*—No.

Q.—Why? *A.*—A misplaced uterus means a mechanical condition that could only be corrected by mechanical means by lifting it again into place.

Now, while it is true that there are certain ligaments attached to the uterus, those ligaments do not contain anything that could lift the uterus about. They contain, it is true, certain of them—only a few however—contain a very little muscular tissue; but that muscular tissue in the round ligament (that is the one which does contain muscle), that muscular tissue is so small in amount that it could not lift anything. More than that, it does not respond, it does not contract even to the stimulation of the most powerful drugs that act on the uterus, that muscle does not contract at all. So any way we look at it, there is no way in which a drug could replace a displaced uterus. It is a mechanical impossibility.

EMPIRICAL AND SCIENTIFIC MEDICINE

Q.—What is the difference between empirical and scientific medicine? *A.*—It depends on the way in which you use the term

"empirical." Empirical really means based on experience. Now all medicine is based on experience. Scientific medicine is based on experience, and on experiments so that there should be, if one properly uses the terms, there should be no difference between empirical medicine and scientific medicine.

Very commonly, however, the term "empirical medicine" is applied rather slurringly to superficial, slovenly observation; observations that are not thorough, and "scientific medicine" is applied to medicine that is thorough medicine, that takes into account chemistry and pharmacology, clinical observations and the whole range of medical science. It is simply a question of whether one is as thorough as you can make it, or whether it makes no attempt at thoroughness. That is the way the term "empirical" is sometimes employed.

DRUGS IN COMBINATION

Q.—Doctor, if two drugs are given together, does that influence the action of each of the drugs? *A.*—Oh, yes, it may be influenced in several different ways. It may influence it by simply adding the action of one drug to the action of the other drug. You take a drug that acts in one direction and another drug that also acts in the same direction, and you give them together and you may get twice as much action as you get from either one alone.

Or, again, you give a drug that acts in one direction, and another drug that acts in the opposite direction, and you give them together and they may neutralize each other and there may be no effect simply by adding the action of one to the action of the other. That is simple addition. That is by far the most common way in which the drugs influence the action of each other, simple addition.

Then, in a few instances relatively a curious thing happens. If you give one drug with another drug, you may produce a greater action than you would have produced with either drug alone, a greater action than with either drug alone, even if you doubled the dose. Take one drug and if you gave twice as much of that drug, you don't produce as much action as if you give that drug with another drug. That is what is called synergism.

Then there is another proposition. You give one drug to produce a certain action, and you give another drug and you find that the action is less than the simple addition of the two actions. That also occurs sometimes.

You have the simple addition. In fact you may get the simple plus or minus, or you may get a greater effect than you would expect, or you may get a smaller effect than you would expect.

The most common way, all things taken into consideration, is as I say simple addition, and that is what one expects to happen until one has direct confirmation that something else does happen. One is not justified in assuming synergism unless one has actually demonstrated that there is synergism and until one has demonstrated it, you must not assume it. There is no general rule which applies. It is a matter that has to be determined in every individual instance.

Q.—Assume that Wine of Cardui contains caramel. Will you tell the jury what caramel is. *A.*—Caramel is burnt sugar. The sugar has been heated until it has burnt to a certain degree and gotten brown or black.

Q.—Is it known to have any medicinal action? *A.*—No, it is not. It is simply used as coloring matter.

USE OF ALCOHOL

Q.—Wine of Cardui contains 20 per cent. alcohol. It is advised to be taken three or four times a day in tablespoonful doses, each dose corresponding to 48 drops of pure alcohol. Have you an opinion as to the effect of these doses of alcohol on female diseases? *A.*—Yes.

Q.—What is it, doctor? *A.*—It would be essentially the exhilarating and narcotic effect of the alcohol.

Q.—Would that action be of any benefit whatever to the female? *A.*—It certainly would not tend in any way to cure those various female disorders. It might make the patient feel better, it might exhilarate them and give them temporary relief, but it would not in any case improve the conditions, of course.

Q.—Would the character of relief which you say it might give, would that tend to cure the disorders? *A.*—Not at all.

Q.—Have you an opinion as to the general advisability of using alcohol in female diseases? *A.*—As a general proposition, I would consider it inadvisable.

Q.—Why not, doctor, why is it inadvisable? *A.*—I would consider it inadvisable because if you produce an exhilaration, or relief in that way, you are not doing the patient any good, and you may do the patient considerable harm.

There are many ways in which it may do harm, habit formation, and all that sort of thing, but it may do harm a little more directly in this way: the patient feels relief. The result is that she may not get the treatment that is really needed for the condition. The result of that would be that that condition would get worse naturally, or it might get worse, and in that way, relief that could be obtained would not be obtained, the real relief, and in that way the condition might become incurable. So besides from the deleterious effects of the alcohol as such, which would be taken into consideration, it might have a deleterious effect in this other indirect way by leading to the neglect of the proper treatment by making the patient feel that she has been relieved, when as a matter of fact, she has not been relieved.

Q.—What is the effect, if you know, of alcohol on the absorption of drugs? *A.*—The effect of alcohol on the absorption of drugs varies undoubtedly with conditions. It used to be the belief that certain concentrations of alcohol, diluted alcohol in other words, increased absorption. That belief was based on the experimental evidence on a very few conditions and on a very few drugs.

Subsequent work has shown that, under other conditions, and conditions which approach more nearly to the natural — that under other conditions the effect of alcohol is rather to hinder the absorption of drugs.

In other words, the effect on absorption cannot be predicted. It has to be observed actually by experiments, and unless these experiments have been made in a particular connection it would be quite unwise to predict what the effect of alcohol on absorption in that connection would be.

Q.—Doctor, would the alcohol in Wine of Cardui act just like its equivalent in whisky? *A.*—The effect on the system of stimulating, and the narcotic action, would be just the same. They would be indistinguishable.

Q.—Would its use strictly, according to directions, three or four tablespoonfuls a day produce the effect of alcoholic stimulation? *A.*—Yes, depending, of course, on the susceptibility of the individual.

Q.—Is it correct that a preparation containing 20 per cent. of alcohol is non-intoxicating? *A.*—No, that would not be correct.

Q.—Is it correct, in your opinion, to say that it contains no habit-forming drug? Is it correct in your opinion to say that Wine of Cardui contains no habit-forming drug, assuming that it contains 20 per cent. of alcohol? *A.*—In view of the wide prevalence of the alcoholic habit, that is certainly incorrect.

Q.—Assume, doctor, that an entire bottle of Wine of Cardui has been taken without producing nausea, or vomiting, diarrhea or any other effects other than those of alcohol. Assume also that Wine of Cardui contains in a tablespoonful approximately the extractives from 30 grains of cnicus benedictus and of approximately three grains of viburnum prunifolium extracted with 20 per cent. alcohol. Bearing all this in mind, have you an opinion as to whether Wine of Cardui contains anything that would prevent its use as an intoxicant, tipple or booze? *A.*—It contains nothing that would prevent its use as an intoxicant, tipple or booze.

Q.—Is ordinary alcohol destroyed in the body? *A.*—Yes, sir.

Q.—To what per cent., doctor, do you know? *A.*—Something like 90 to 98 per cent. is oxidized in the body to water and carbon dioxid. It is burnt.

Q.—Does this oxidization prevent the alcohol from producing its actions, alcoholic actions? *A.*—No. If it prevented the alcohol from producing its alcoholic action, then one could never get an effect from alcohol at all under any circumstances. The fact that one can get drunk on alcohol shows conclusively that the oxidation of it does not prevent it from acting. The explanation of that is that the action of alcohol occurs almost at once. Its oxidation is a slow process. In other words, a person becomes drunk before the alcohol is burned up.

Q.—Does the rate or degree of oxidation depend upon the dose and concentration of the alcohol? *A.*—To a slight degree on the dose; not at all on the concentration. In any case the greater part is burnt up, the greater part of the alcohol is burnt up anyway.

Q.—What becomes of the per cent. of alcohol that is not oxidized in the system? *A.*—That is excreted by the lungs and by the kidneys.

Q.—Would the stimulant and narcotic action of 48 drops of alcohol be greater or less if it is given in 20 per cent. or in 55 per cent. dilution? *A.*—It would be indistinguishable just as the narcotic and stimulant effect of the same dose of alcohol is indistinguishable whether it is given in the form of whisky, or in the form of beer.

Q.—Is alcohol a common constituent of official drugs? *A.*—It is a constituent of certain fluid preparations, the spirits and tinctures and elixirs and fluidextracts. It is not a constituent of other fluid preparations, glycerites, emulsions, syrups—those are all that I think of at the moment.

Q.—Infusions? *A.*—Infusions and decoctions, yes sir. There is one infusion—I may make an exception—there is one infusion which at present contains a small percentage of alcohol. Otherwise they do not contain alcohol.

Q.—Does the solid extract or solid drug contain any alcohol? *A.*—The solid drugs of course do not, alcohol being a liquid.

Q.—Now, are these various preparations that you have just referred to as containing alcohol, are they prescribed by physicians? *A.*—Oh, yes.

Q.—Do the same objections hold for the official alcoholic preparations as for Wine of Cardui? *A.*—In a way they do, and in a way they do not. It depends altogether on the conditions. If the official preparations are advertised like the proprietary preparations, if they are bought like the proprietary preparations indiscriminately over the counter, if they are used without fully taking into account the alcoholic effects, then the presence of alcohol in them is of course just as objectionable as it is in the case of proprietary preparations.

If on the other hand they are not used by the public in the same way, or if they are prescribed under certain conditions by physicians, namely where the physician knows the patient, and knows what the patient is, and what the effect is he wants to produce, takes the effect of the alcohol into account, where he uses the preparation over a limited time only and where he uses the preparation, the dose of which cannot be spontaneously increased by the patient because it contains active ingredients—where several or all of these factors obtain at the same time, then evidently the same objections do not hold to the official preparation, as do to the proprietary medicines that are not protected in these various ways.

Q.—Assume, doctor, that the following United States Pharmacopeia preparations contain more alcohol per dose than does Wine of Cardui:

Spirit of anise
Tincture of sweet orange peel
Spirit of juniper compound
Tincture cimicifuga
Wine of coca
Tincture of nut galls
Paregoric

How does the prescribing of these compare with the use of Wine of Cardui? *A.*—The first two preparations you mentioned were spirits of anise and spirits of orange. These preparations are used principally for flavoring, and in very small amounts, and contain much less alcohol of course than the 48 drops, because there are only 2 or 3 drops used. It is only under comparatively rare conditions that they are used in the full dosage, namely in cases of colic and things of that kind. In those cases, in the first place, they are only used for a short time. They are only intended to be used while the colic lasts, and everybody knows that colic does not last more than a day or two usually.

In the second place, it is the action of the alcohol that is there that is a part of the desired action. Alcohol relieves colic. There are two distinctions, one is that they are only used for a short time and the other is that they are used in such small quantities.

The next preparation you mentioned, I believe, was compound spirit of juniper?

Q.—Yes, that is right. *A.*—That is practically gin, and when it is used, it is used with a full realization that it contains alcohol and it is used under conditions where the alcohol plays a part in its action.

Q.—Tincture of cimicifuga is the next one. *A.*—Tincture of cimicifuga is a typical stomach bitter. It again is used partly for the effect of the alcohol that is in it. In other words, the alcohol there contributes to the effect. It is used in certain types of indigestion, and in certain types of indigestion, the alcohol helps as a sort of counter irritant. It irritates, just like a liniment helps a little sprain.

Q.—Wine of coca is the next one I mentioned. *A.*—Wine of coca was used to a small extent by physicians, mainly for its alcoholic stimulant. It is really a form of alcohol just like a form of wine, and when one uses Wine of coca, one uses it partly for the alcoholic effect, and partly for the stimulating effect of the cocain that is in it. I personally have never known of a physician that ever prescribed Wine of coca, and it is being dropped from the pending edition of the United States Pharmacopeia as an undesirable article.

Q.—It is being dropped from the pending edition of the United States Pharmacopeia. You mean the edition that is coming from the press? *A.*—The edition that is coming from the press, yes sir.

Q.—I next mentioned tincture of nut galls, doctor. *A.*—Tincture of nut galls is used as an astringent in diarrhea. Of course it would only be used for a short time. Furthermore, the very astringent that is there would preclude its use as a beverage in larger doses than the ones that I indicated practically. If it were tried in a large dose it would interfere with the patient's bowels, and they would become so locked up, that he would have to leave it off in a very short time. The last preparation, if I recall it, was paregoric?

Q.—Yes. *A.*—Paregoric contains alcohol, opium and camphor. Those are the essential constituents. It contains several others besides. It is used in colic and diarrhea, usually for the opium effect, and that very opium effect would preclude its abuse in larger amounts, except by morphin habitués, of course.

Q.—Now, doctor, assume it to be a fact that panopepton contains more alcohol per dose, than does Wine of Cardui. How does the prescribing of this preparation compare with the use of Wine of Cardui? *A.*—Panopepton is a proprietary preparation. It is practically an alcoholic food preparation. That is to say, it contains certain soluble food elements, sugar and digested meat, and that sort of thing, and alcohol. It is prescribed usually during convalescence, sometimes in fevers. When it is so prescribed, the alcohol plays a very distinct part in its action. It acts under those conditions, partly as a food and partly as a sedative and an exhilarant. Here again, the alcoholic action is a desired element, when it is prescribed. It is not simply an accident that creeps in but it is considered, or should be considered, when it is prescribed. Certainly it produces a positive part of the effect.

Q.—How does the dose of alcohol in tincture of iron, quinin and strychnin compare with the alcohol in Wine of Cardui? *A.*—The elixir of iron, quinin and strychnin, like most other elixirs, contains about 25 per cent. alcohol. The dose of quinin, iron and strychnin is a teaspoonful, so that the dose of alcohol never would approximate 15 drops per dose as compared with the 48 drops you are asking me to assume in the Wine of Cardui. The alcohol per dose would be about 15 drops.

Q.—Does it contain anything to prevent its excessive use? *A.*—Oh, yes, it contains the strychnin.

Q.—The strychnin you say? *A.*—Yes.

COUNCIL ON PHARMACY AND CHEMISTRY

Q.—Doctor, you state that you are a member of the Council on Pharmacy and Chemistry of the American Medical Association? *A.*—Yes, I have been since its foundation.

Q.—What are the functions of this Council? *A.*—The Council was founded by the trustees of the American Medical Association, I think in 1905, about 11 years ago, anyway, with the purpose of investigating the drugs that are prescribed by physicians, particularly I mean the proprietary, as distinguished from the official drugs and of informing the medical profession as to what it could find out about these drugs.

That was and is the purpose of the Council on Pharmacy and Chemistry, to collect and publish information about the drugs that are prescribed, proprietary drugs or unofficial drugs, rather—that is the exact definition, unofficial drugs that are prescribed or offered to be prescribed by physicians.

Q.—What was the occasion of this foundation, doctor? *A.*—As I understood it, the occasion of the foundation of the Council was a desire of the trustees of the American Medical Association to be informed regarding the remedies that sought advertising space in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Before that time, THE JOURNAL tried to pass judgment itself on the character of the numerous preparations that are submitted to its advertising pages, and it found that that did not work out very well. Very often it was caught.

It therefore found that job was too large for it to handle, and therefore appointed a body of men who would make a special study of this subject of unofficial drugs and left the judgment of these drugs and the investigation of them to this council. That was the occasion of it.

The object into which it finally developed was not confined to THE JOURNAL at all, but to informing the profession in general as to what it could find out about the preparations that physicians were using.

Q.—Doctor, what is the book known as New and Nonofficial Remedies? *A.*—That is an annual publication of this Council on Pharmacy and Chemistry. It contains the descriptions of the articles that have been accepted by this Council, investigated and found on the whole worth while.

Q.—What determines the admission of a preparation to this book? *A.*—That is determined by whether the article complies with the established and printed rules of the Council for the admission of the articles?

Q.—What is the object of those rules? *A.*—The object of those rules is that the full truth, and nothing but the truth be told about an article that physicians are asked to use.

Q.—Are secret remedies admitted? *A.*—Secret remedies are not admitted, that is to say, remedies the composition of which is not known, are not admitted; they are not admitted to this book.

Q.—Now, why is this restriction made, doctor? *A.*—That restriction is made because no physician, with full understanding, prescribes a medicine unless he can find ont about its composition. If he cannot find out about its composition, he lays himself, or rather he lays his patient open to numerous dangers.

In the first place, he cannot use the drug itself intelligently, if he does not know what it is. In the second place, he is apt to make very dangerous combinations if he does not know what is in the drug. He may add some drug to this mixture that he prescribes, that is in the mixture itself. He may thereby increase the dose. He may increase it above the safe limits, or he may add strength to it—he may add something to it, not knowing what is in it, that interferes one with the other and he does not get the desired effect in that case, without the medicine being at all at fault.

Then again it is a well known fact that quite a large number of people have peculiar susceptibilities to drugs which a physician must guard himself against—towards special drugs—that a physician must be on his guard against. If he does not know what is in that mixture, he cannot guard against them and he finds it very difficult to recognize them when they do occur.

For those reasons—there are probably some others that don't occur to me at the moment, but for those reasons amongst others let me say then, a physician should not really prescribe and certainly should not be asked to prescribe medicines, without being able to find out about their composition. In other words, he should not be asked to prescribe secret remedies, and for that reason secret remedies are not accepted by the Council.

Q.—Does the Council admit remedies that are advertised? *A.*—It admits remedies that are advertised to the medical profession. It does not admit remedies that are advertised to the public direct.

Q.—Why is this restriction made, doctor? *A.*—That restriction is made because, in the experience of the Council, remedies that were advertised, or are advertised to the public are very apt to be detrimental, to do more harm altogether than they do good.

Therefore, in the interests of public health, the Council would be inclined to take that action, especially as it is dealing only with remedies that should be used by physicians, and for those reasons that I started to state, physicians should not, in the opinion of the Council, use drugs generally that are advertised directly to the public. There may be individual exceptions to that, but as a general rule, physicians would not use them or should not use them.

Q.—Doctor, are the actions of the Council compulsory on the physicians? *A.*—Oh, no. The Council simply informs and in that way advises. Whether its advice is taken, or whether its information is considered, that is really not the affair of the Council, and it has not even any means of knowing what physicians, or whether any physcians for that matter, (except by some physicians writing in) follow its advice. It certainly has no means of compelling anyone to accept its opinions, even if it had the desire.

RULE OF THE COUNCIL

Q.—Now, are the reasons of the Council as to its actions in regard to direct advertising set out in the rules themselves? *A.*—Yes, they are fully explained in the rules of the Council.

Q.—Have you a copy of those rules? *A.*—Yes, I have.

Q.—Will you produce it? (Pamphlet produced by witness.) What rule is it, doctor? *A.*—The mention of the direct advertising, and the fact that remedies (with some exceptions) that are directly advertised to the public, are not admitted by the Council, is stated in Rule 3 of the Council. The reasons for this are stated in the explanations to Rule 3 which I have here.

Q.—Will you just read this, doctor, that is, the parts that bear upon this question. Rule 3. *A.*—Shall I read the rule first, and then the explanation, or will you take the rule for granted?

Q.—Yes, so as to get it in the record. *A.*—(Reading.) Rule 3. Direct advertising. No article that is advertised to the public will be accepted or retained; but this rule shall not apply (2) to disinfectants, germicides and antiseptics—

Mr. Hough.—You are not reading the whole of the rule there, are you? *A.*—Yes.

Q.—Isn't Rule 3 "Direct advertising, lay advertising?" *A.*—Yes, sir, that is what I am reading.

Q.—Are you reading the rule? *A.*—I am reading a copy of the official rules. I am reading the rules. Perhaps you are looking at the explanation.

Mr. Hough:—No, I am reading the rule. It says—

THE COURT:—What is the date of yours?

Mr. Hough:—1914.

The Witness:—Mr. Hough is reading out of the rules as they are contained in a book. I am reading out of a copy—

Mr. Hough:—They ought to be the same.

The Witness:—They are identical. There is some confusion. Perhaps if you give me the book I can clear it up.

Mr. T. J. Scofield:—I will hand you the book that I was examining you from, 1916, March 1.

The Witness:—You are reading from the explanation, and it is the rule proper that I was reading. Shall I read this again?

THE COURT:—Go ahead.

The Witness:—I read then from the beginning and go on. "Rule 3. Direct advertising. No article that is advertised to the public will be accepted or retained;"

Mr. Hough:—Accepted or what?

The Witness:—That means for this book, New and Nonofficial Remedies. These are the rules for the admission of articles for this book, New and Nonofficial Remedies.

Mr. Hough:—But you read something that I do not see in my book. Accepted or what? *A*.—Accepted or retained.

Mr. Hough:—That is new I guess "or retained," is new.

The Witness:—Have you 1916?

Mr. Hough:—1914.

The Witness:—It is 1916 that I am reading. There may be slight changes in the rule—

Mr. Hough:—The rules change every year?

The Witness:—There may be slight changes in the rules from year to year, yes sir. (Reading.)

"But this rule shall not apply (a) to disinfectants, germicides and antiseptics, provided that the advertising be limited to conservative recommendations for their use as prophylactic applications to superficial cuts, and abrasions of the skin and to the mucous surfaces of the mouth, pharynx and nose (but not to those of the eye and the gastro-intestinal and genito-urinary tracts) and provided they are not advertised as curative agents. (See Comments to Rule 3); and (b) to nonmedicinal food preparations, except when advertised in an objectionable manner."

Then the explanation of these rules state as follows: "Rule 3, Direct Advertising."

Mr. Hough:—Pardon the interruption. Is this part taken out, (c) and circulars when distributed solely to physicians.

The Witness:—Yes, sir, that has been taken out. The part I am coming to now, is on page 17.

"The impossibility of controlling the irresponsible claims which are usually made in advertisements to the public, the well known dangers of suggesting by description of symptoms to the minds of the people that they are suffering from the many diseases described, the dangers of the unconscious and innocent formation of the drug habit, and the evils of harmful self medication, including the dangers of the spread of many infections and contagious diseases, when hidden from the physician and similar well known considerations, are the reasons for discouraging, in the interest and for the safety of the public, this reprehensible form of exploitation. Advertising in medical journals etc., distributed solely to physicians does not come within the scope of this rule.

"In the case of subjects on which the public should be instructed as the use of disinfectants, germicides, antiseptics and foods, advertisements to the public, if not in objectionable forms, are considered admissible. In no case shall such advertisements include recommendations for use as curative agents, nor shall the names of any diseases be mentioned in exploitation. If the preparation is sufficiently toxic to require caution in its use to prevent poisoning, this fact shall be stated on the label."

The Witness:—The next part is a minor explanation, which I do not know whether it is desired to read, down to the bottom of the page, the third line from the end. I will be glad to read it if it is desired.

Mr. T. J. Scofield:—Yes, go ahead, I want it in the record.

The Witness:—(Reading.) "On account of the deplorable results which follow any abuse of this privilege, the conscientious cooperation of manufacturers and their agents in adhering strictly to the limitations laid down, is asked; and for the same reason the acceptance of an article which is so advertised as to infringe on these limitations in any essential way (as by naming diseases or by making false and exaggerated claims) shall be summarily rescinded, and the reasons for such action may be published without notice to manufacturers or agents.

"A disinfectant, germicide or antiseptic, will be accepted for description in New and Nonofficial Remedies and an article of this class, which has already been accepted will continue to be included with New and Nonofficial Remedies, only on the explicit understanding by the manufacturer and agent, that such infringements of the rule will be followed by deletion of the article and by publication of the facts as described."

The Witness:—Shall I continue?

Mr. T. J. Scofield:—Yes.

The Witness:—(Reading).

"We may divide the foods into three groups. The first group contains the ordinary groups, including the well known breakfast foods. These do not come under the supervision of the Council in any way.

"The second group includes a large and important class of manufactured products, such as invalid and infant foods, which in a sense stand between the first and third groups. The public has the same interest in these foods that the physician has, and usually is supplied with full information concerning them. While the primary recommendation of these articles should naturally come from the physician, it cannot be expected that their continued use should depend on repeated prescriptions. Information concerning this group of foods would come naturally and properly from a physician, and the collection and dissemination of this information may very properly be included in the work of this council.

"As the products in this case are used extensively, it is not proper to limit their advertising to medical journals, but the advertising should be permitted in the lay press, so long as it is conducted in a manner compatible with the rules of the Council.

"The third group includes medicinal foods proper, such as predigested foods. These have a relatively low food value, and are characterized by a high alcohol or preservative content. They frequently contain strictly medicinal substances or food substances for which distinct therapeutic properties are claimed. These products should be used only on the advice of the physician, and the advertisements should be restricted as in the case of ordinary medicines."

Mr. T. J. Scofield:—Now then, Doctor, let me ask you whether or not those are rules which relate to the admission of medicines in what you call the New and Nonofficial Remedies? *A*.—That was a rule and its explanation, and the book relates to that. Yes, the book relates to the admission—

Q.—First, if any person has a proprietary medicine, and desires to introduce it, or get it into that book, he submits his medicine for examination, and if it is right, it goes into that book, is that right? *A*.—That is the idea exactly.

Q.—Now, doctor, I will ask you whether or not physicians are opposed to "patent medicine"?

THE COURT:—Is this his opinion you are asking for now, or do you want him to tell you that as a fact?

Mr. T. J. Scofield:—I am asking for his opinion, whether in his opinion, physicians are or are not opposed to the use of "patent medicines"? *A*.—The answer must take into account whether you mean by "patent medicines" what the words should mean, patented medicines, medicines on which a patent has been granted by the government of this or a foreign country. In that sense it is very clear that the medical profession is in no sense opposed to them because of the extensive use of such patent preparations, or patented preparations as aspirin, salvarsan, sulphonal, atophan, and a very large number of patented articles, which will be found and a considerable proportion of which are very extensively prescribed.

Q.—That is true of adrenalin, isn't it? *A*.—Adrenalin belongs to that class, yes. If, on the other hand you mean by "patent medicine" what most people mean by it, a medicine that is generally not at all patented, but a secret medicine, that is advertised directly to the public, then I should say that the medical profession, as far as I know its sentiments, is opposed to the methods by which those medicines are brought on the market, and brought into the hands of the consumer. They are opposed to the "patent medicine" exploitation, but not necessarily, primarily to the "patent medicine" proper.

Mr. T. J. Scofield:—I think that is all, doctor.

Whereupon the further hearing of said cause was adjourned to 10 o'clock the following day, May 10, 1915.

May 10, 1916, Morning

TESTIMONY OF DR. T. SOLLMANN (*continued*)

Dr. Sollmann resumed the stand for the defendants.

CROSS-EXAMINATION BY MR. HOUGH

Q.—Doctor, as I understand you have never been in active practice? *A*.—No, I never have.

Q.—Your work has been confined entirely to experimental work? *A*.—Well, in a sense, yes. Of course I have watched the treatment of patients in the hospitals. I visit the hospitals and am consulted there about treatment and watch the results of the treatment.

Q.—You say you have been a member of the Council ever since it was formed; how long has it been in existence? *A*.—About 11 years, I think it was founded in 1905, if I am not mistaken it was in February, 1905, that it was founded. I think I am correct about that.

Q.—How many members has the Council? *A*.—It has 15 members with the secretary, that makes 16 in a sense.

Q.—Does that include the corresponding members? *A*.—No, it does not include the corresponding members, no.

Q.—How many corresponding members have they? *A*.—There are three I believe.

Q.—When did you first commence to publish New and Nonofficial Remedies? *A*.—I think, Mr. Hough, that was about two years after the foundation of the Council.

Q.—About 1907? *A*.—I think so. I might be mistaken, but that is my recollection.

Q.—Who appoints the members of the Council of Chemistry and Pharmacy? *A*.—The members of the Council are elected or appointed by the trustees of the American Medical Association.

Q.—That is controlled by the trustees? *A*.—It is controlled by the trustees, yes sir.

PHARMACOPEIA COMMITTEE

Q.—You are a member also of the United States Pharmacopeia Committee? *A*.—I am, yes sir.

Q.—Are you one of the trustees of the Pharmacopeia? *A*.—No.

Q.—Has there not been a controversy going on between the Council of Chemistry and Pharmacy and the Pharmacopeial body? *A*.—No, not as bodies. Of course, individual members of any two bodies may have had a difference in their opinions on certain special questions, but there has been so far as I know, no controversy between the two bodies whatsoever. They have no relation to each other and there is no occasion for controversy.

Q.—Well, the members of the Pharmacopeial Revision Committee are not confined to members of the American Medical Association, are they? *A*.—By no means.

Q.—It represents the entire field of medicine, pharmacists, doctors, chemists and pharmacologists. Is there any other classification except those, would you say? *A.*—I should think they would practically come in. They are elected from delegates that are sent by the medical bodies, various medical organizations and medical associations, pharmaceutical bodies and pharmaceutical associations and by the Government Medical Services and I think the Department of Agriculture also has representatives and the pharmaceutical schools.

Q.—That is, the Public Health Department of the Government and the Department of Agriculture both are represented in that body? *A.*—Yes, sir, and the Army and Navy Departments I think. They are elected, a body of delegates. Each organization that sends delegates are entitled to three delegates and those delegates vote and elect out of their number without any direct reference to chemists or pharmacists and so forth, a certain number of delegates. I ought to qualify that a little, because in the last pharmacopeia convention, there was a distinction made between pharmaceutical elections and medical elections. It was agreed that a certain number of the new Revision Committee—it was a new departure, the Revision Committee of fifty—it was a new departure, and in order to simplify matters it was agreed there that I think 35 of those should be elected by the representatives of pharmaceutical organizations and 15 by representatives of medical organizations, or some such number. I think it was 35 and 15.

Q.—When was the last Pharmacopeial Convention? *A.*—That was in 1910.

Q.—They meet every ten years and revise the Pharmacopeia, don't they? *A.*—Yes.

Q.—And then the Revision Committee is elected and the Committee works for five or six years before they finish the work? *A.*—This time it is nearly six years.

Q.—Your new Pharmacopeia is almost finished now, is it not? *A.*—It is going through the press, yes.

Q.—And in that all branches have participated, whereas in the New and Nonofficial Remedy list, only the American Medical Association appointees participate? *A.*—Yes, sir. Of course the medical and pharmaceutical professions and the chemists are represented on the Council still, but they are, as I say, appointed directly by the American Medical Association for a particular purpose and the others are elected at large.

Q.—Now, about five or six years ago, the American Medical Association made an effort to get control of the Pharmacopeia exclusively, didn't they? *A.*—No, Mr. Hough.

Q.—You don't know anything about it? *A.*—I know a great deal about what took place at that time, but I do not know of any such attempt at all.

Q.—What do you know about any effort of that character? *A.*—There was a question at that time to a considerable extent with the opening up of the new Pharmacopeia, this decennial revision—that it would be advisable perhaps to restrict the scope of the pharmacopeia. Certain people had that opinion, and other people had an opinion in the opposite direction.

The American Medical Association, as such, I think, took no part in it at all. The matters were discussed. Those two policies were discussed, but not at all, Mr. Hough, with the idea of getting hold of the Convention or putting it in the hands of the American Medical Association. That I have never heard discussed even or even the idea of it.

The scope of the pharmacopeia has been discussed in THE JOURNAL but all the suggestions that are made did not in the slightest degree contemplate a control of the Revision Committee by the American Medical Association. I never heard a suggestion that the delegates should be elected in any other way than the way that has been customary.

Q.—How many drugs were in the last Revision of the Pharmacopeia? *A.*—I happen to remember that there are 890 or 980 titles. I have a memorandum, if you wish the exact number.

Q.—That is sufficient. *A.*—Something like that.

Q.—The American Medical Association representatives on the Pharmacopeial Board at the last Revision attempted to cut those down to 44 drugs, didn't they? *A.*—Oh, no, Mr. Hough.

Mr. T. J. Scofield:—Doctor, speak louder and more distinctly, please.

A.—No, not at all. Never dreamed of such a thing. In the first place—

Mr. Hough: *Q.*—Did they ever attempt to cut them down at all? *A.*—I don't remember who the American Medical Association's representatives officially there were. I was not one of them. I was a delegate from the Ohio State Medical Association. But such an idea of cutting down the number of drugs in the pharmacopeia to 44, has never to my knowledge been advanced by anybody except as a straw man that was set up as something to be knocked down. No one on the side of the medical profession that I know of has ever suggested any such absurd thing.

Q.—Didn't such an article appear in THE JOURNAL itself? *A.*—Not to my knowledge, and I read THE JOURNAL pretty carefully.

Q.—Well, you say the suggestion was made by somebody, but you don't believe it was anyone from the American Medical Association? *A.*—I do not know, Mr. Hough, that it has ever been made or advanced from any responsible quarter. I am simply taking your statement that it has been made. If it has been made, it must have been made the way that I said. I personally never heard of it.

Q.—You personally knew nothing about it? *A.*—No.

Q.—Now, the significance of a drug appearing in the pharmacopeia is that it is being generally used by physicians, isn't it? *A.*—Not necessarily, Mr. Hough.

Q.—Not what? *A.*—Not necessarily. You mean, of the past pharmacopeia, or of the coming pharmacopeias?

Q.—The past pharmacopeias. *A.*—In the past pharmacopeias I have not been directly concerned in their revision. This was the first time I was a delegate and what may have been in the minds of the delegates to the previous convention of course I cannot speak of at first hand. I have never taken it that all the drugs that appear in the pharmacopeia are used extensively or at all, even by physicians. There are a number of drugs in the pharmacopeia that are put in there simply as reagents and again a number of things that are put in there for making pharmaceutical preparations.

Q.—I am talking about those things that are in the pharmacopeia that are to be prescribed in sickness, as distinguished from any reagents or chemicals, or chemical methods concerning the mixture of preparations of drugs. *A.*—Yes, I just wanted to get that clearly. I should say that that was the intention of the people that put them in, naturally that is what they would naturally have in their minds.

Q.—Viburnum prunifolium is contained in the present revision, is it not? *A.*—Yes, viburnum prunifolium is contained in the present revision. Now I can tell you what the intentions were of the present revision committee as to these matters, from my personal knowledge.

Q.—I am only asking you if it is contained there. *A.*—It is contained there, yes.

Q.—And they have taken out the requirement in the old pharmacopeia that it is the bark of the root. Now, it is just the bark, any part of the bark, isn't it? *A.*—That I do not know, Mr. Hough, at all.

Q.—Well you have seen it, the sheets are sent to you are they not? *A.*—I have seen the sheets, but I certainly have not noticed that.

Q.—You have not noticed that? *A.*—No. If that is there, I don't know it at all. It slipped by me, if it is there.

EARLY USE OF DRUGS

Q.—How did medicines come to be used in the beginning? *A.*—How did they come to be used in the beginning?

Q.—Yes. Was it not the result of home treatments, people in the country used weeds and herbs for certain conditions? *A.*—Of course I cannot give you any definite knowledge about those back times. I can only reason from what the probabilities are.

Q.—I mean, from your reading? *A.*—From the probabilities of what happened in the prehistoric times.

Q.—You know about Hippocrates? *A.*—Well, I guess they were used before Hippocrates no doubt.

Q.—Coming down to this country, viburnum prunifolium was introduced first as having been used in families in the country going out and getting the bark of a tree? *A.*—That is the way I think in which it came to their attention.

Q.—And after extensive use that way, it was taken up by physicians, wasn't it? *A.*—Of course I do not know how extensive the use was, Mr. Hough.

Q.—You do not know how extensively families used it at first? *A.*—No, it might have been used in just one locality, one man might have heard about it. I don't know. It might have been used very extensively. I have never heard a statement of that.

Q.—And your reading of the history of medication and drugs don't tell you anything about it? *A.*—About what, viburnum?

Q.—Yes, about how it was introduced in medicine. *A.*—Oh, yes, I have read the history of it.

Q.—Well, that was the way it was introduced, was it not? *A.*—The first mention I saw of it in the literature, was in the year 1850 or thereabouts.

Mr. T. J. Scofield:—A little louder, doctor.

A.—Was in the year 1850 or thereabouts, where, in a work on plants I believe—it is a little hazy in my mind—there occurs a statement that it is used in domestic practice, I mean in families. Then that I think did not obtain any great notoriety. Then there were—oh, a matter of four papers in the next 15 years and then a paper by Phares, I believe. That was rejected, but he, however, states that it was introduced in that way, that he learned of it through its being used in families; around in families where he was practicing, some village in Mississippi if I am not mistaken.

Then afterwards, for ten years, nothing further appeared about it, and then there came a group of papers. That is what I gathered from my reading, as to the history of its introduction.

Q.—Carduus benedictus was introduced into the practice of medicine in the same way, was it not? *A.*—I should imagine in some such way. The history goes back to a time when there is not any literature.

Dr. Sollmann was then questioned in detail concerning the literature on carduus benedictus. The first mention of it which he had found in connection with uterine diseases was that of Cooper in 1849. He did not remember reading Schroeder in 1693. He did read Sammon's "Herbal" in 1711. Out of forty-eight papers read since 1650, he found reference to uterine diseases in four.

He testified that both carduus benedictus and viburnum prunifolium are used as a tea.

Q.—That is, the virtues of the drug were extracted by the water? *A.*—Whatever virtues there were, if any.

Q.—And therefore water would extract all the virtues which viburnum prunifolium originally was supposed to possess? *A.*—If it possessed any such virtues, the use of hot water, the hot tea, would extract them.

Q.—Then, does the addition of alcohol help the extraction in any way? *A.*—Of what, Mr. Hough?

Q.—Of the extractives of any herb, such as carduus benedictus or viburnum prunifolium? *A.*—It all depends upon what the active constituents, if any, are.

Q.—Without reference to what they are, starting with the proposition that water alone extracts all that was originally known as medicinal, does the addition of any alcohol assist the action of the water in that extraction? *A.*—You ask me there to make an assumption that I have not granted, that there was any activity known to be present

in the drug originally. I would be prepared to deny that, so I don't believe I could answer the hypothesis in the way you put it.

Q.—Whatever reputation those drugs had before they got into the pharmacopeias was due to the extractive matter brought out by the use of water alone, wasn't it? *A.*—No, I don't believe so. I would not be sure of that point, and I do not think that the drug got into the pharmacopeia until the year 1880, and I don't believe it was used exclusively by the physicians who reported upon it previous to that time, in the form of infusions or decoctions. I would not be absolutely sure.

Q.—I am not talking about its exclusive use by physicians. I am talking about its home use, which preceded its use by physicians, country use? *A.*—I misunderstood it then. Will you repeat your question?

Q.—You said it was not used exclusively by physicians in the form of a tea at the time it went into the pharmacopeia in 1880? *A.*—So I believe.

Q.—I supposed some of them used it in the form of a tea? *A.*—I believe under certain conditions, at least, they did.

Q.—But the reputation of the drug was established as an infusion of that character, in its use by the women of the country before the doctors took it up at all? *A.*—I do not know, Mr. Hough, whether the reputation of it is established now, and I do not think it susceptible—

Q.—I am talking about whatever reputation it had at the time it first went into the pharmacopeia. It must have had a reputation or it would not have gotten into the pharmacopeia, isn't that true? *A.*—Yes, sir, that is true.

Q.—Now that reputation was based originally on its use in the homes of people who lived out in the country? *A.*—I would not say that.

Q.—Would you say it was not? *A.*—That undoubtedly started physicians to trying it. There are a good many things that are used in the homes of the people that are not effective; some are, and some are not.

Q.—Then, when the physicians commenced to use it, they would first use it in the way it was being used in the homes of the country and then they might vary the use, might they not? *A.*—Not necessarily, Mr. Hough.

Q.—Well, whatever reputation it had, prior to the time it went into the pharmacopeia, as a pharmacopeial drug, was based upon the extractive matters which were taken out with water? *A.*—I do not know that the matter is important, but I do not think I can grant that premise at all. It does not seem at all a logical sequence.

Q.—I don't want you to grant any premise at all. I want you to tell what you know as a fact, and what your judgment is from your reading, and what you believe is true. *A.*—I stated, I think, that I did not know exactly the form it was first used in by physicians. However, to cover it, I wish to make myself clear.

THE COURT:—Let me ask you, Dr. Sollmann; if the benefits from this herb were first discovered by women, may we not assume that they probably extracted whatever of the active principle they got out of it, with hot water and cold water and not by the use of alcohol?

A.—So far as the use by women is concerned, I think that is absolutely true, but I do not think that it necessarily follows that physicians also tried to extract the principles in the same way.

THE COURT:—Well, assume that for a moment. Now, if we assume that as true, how much of the active principle would you get out by the use of alcohol, how much more? I think that is what your question includes? *A.*—Is that the tendency of it? Well, since I do not know, Mr. Hough, what the active principle is, I cannot answer that question.

DRUGS IN PHARMACOPEIA

Mr. Hough: *Q.*—Now, the pharmacopeia is full of drugs of which the active principle is not known, isn't it? *A.*—Oh, yes. Not full of them by any means.

Q.—I don't mean that literally. *A.*—I took that question in the way I understood you to intend it. It contains such drugs.

Q.—And a large number of them? *A.*—Well, I would not say what proportion. It contains some. I could very easily agree to that, but I would not say, offhand, how large a proportion.

Q.—And drugs appearing in the pharmacopeia have been used for years without knowing how the action which is supposed to be brought about, is brought about, haven't they? *A.*—Oh, a good many drugs have been continued that way for a long time.

Q.—And that is not a reflection on the drug, that the method of its action is obscure, is it? That is, if you do not know how it acts? You do not know how it brings the results, which are attributed to it. That is not a reflection on the drug, is it? *A.*—Well, I would not say that it is a reflection on the drug, exactly, but it is a reflection on its use to a considerable extent.

Q.—It is a reflection on its use? *A.*—Yes.

Q.—Then why did you put into the New and Nonofficial Remedies, stypticin, with the statement that its method of action is obscure? *A.*—Yes.

Q.—I say, why did you put it in, if it is—if it should not be there? *A.*—I did not say that no drug should be used unless the method of action is known. I said it reflects upon the—

Q.—Upon the use of it? *A.*—That is, upon the use.

Q.—But when you put a drug in this, it is an invitation to a doctor to use that drug, isn't it? *A.*—It says that so far as the Council can ascertain, that sort of a drug is perhaps worth trying.

Q.—It is an invitation to use it, isn't it? *A.*—I would not put it in just those words.

Q.—Then of course it cannot be any reflection upon anyone who does use it without knowing how it acts? *A.*—I would not say it was a reflection upon anyone who uses it, but I think if he knew how a thing acted, he would prefer that and he should always be trying to find out how this does act.

Q.—Now, the practice of medicine has been carried on for a long time before physicians knew just how the drugs did bring about the results which they were supposed to bring about. That is a fact, isn't it? *A.*—In a sort of a general way it is. The physician will use the best means he can. He does not always choose to use those means, but if nothing better is available, he will use those means. He will try to find out how the drugs act. They have been trying to find out in a way since they began to use drugs, and have formed various ideas about it, but they did not have the means for finding out, and as soon as the means were furnished by the progress of science, they at once turned to them to try to find out.

Q.—They did not then prescribe the drugs they had been working on, or cease to prescribe them because they could not find out how they acted? *A.*—Not unless they found one that they could find out how it acted.

Q.—In other words, they might get a substitute and they preferred to use something that they knew how it acted rather than to use something that they knew did act, though they did not know how it acted? *A.*—I think in a general way I might agree to that. Of course it is rather an involved general statement, but I think I can agree to that.

Q.—You understand what I mean by the question, didn't you? *A.*—I think so.

Q.—How many of the drugs that are in the United States Pharmacopeia have been proved pharmacologically? *A.*—I never figured that out, Mr. Hough.

Q.—Ten per cent., would you say? *A.*—Oh, the majority of them, I should say, but that is an offhand statement. A considerable majority of them.

Q.—Do you think more than half have been proven? *A.*—I think so, yes.

Q.—Is there any list anywhere published of the drugs which have been proven pharmacologically? *A.*—Not that I know of, except, of course, all sorts of books on pharmacology which will give information as to what has been done on the subject. If work has been done on it, and that has led to any results so one could check it up—but I have not got it in my mind.

Q.—Do you now regard pharmacology as an exact science? *A.*—"Exact" is rather a relative term in human affairs.

Q.—I did not hear you. *A.*—"Exact" is a relative term in human affairs.

Q.—A relative term? *A.*—Yes. A thing that is exact in one connection is not exact in another. If you are weighing a ton of coal, a pound or two makes no difference. It is still exact. If you are weighing a diamond, a pound or two would make a fundamental difference, it would not be exact at all. It is all relative, so it is a very hard question to answer.

Q.—Well, in that sense, or in either sense, would you say that pharmacology was an exact science? *A.*—I don't believe I could answer that question as a broad proposition.

Q.—Well, like mathematics, say? *A.*—Oh, no, it is not like mathematics.

Q.—There are still many sources of error in it, are there not? *A.*—Well, it is susceptible to improvement, yes, Mr. Hough.

Q.—What is that? *A.*—It is susceptible to improvement like all biological science.

Q.—And proof by whatever method you achieve, or establish that a drug acts upon a lower animal, would be reasonable proof that it acts in some way upon the human being. That is one of the fundamental principles of the science, is it not? *A.*—That if it has some action on lower animals, that it will have some action on human beings I should state that as a broad proposition, yes.

Q.—Would you state that the negative or reverse of that is also true, without qualification? *A.*—That is to say, that if a drug has no action of any kind on a lower animal—

Q.—No action which you discovered by your tests? *A.*—Yes. Or any action that can be discovered by the methods of pharmacology elaborated up to the point where they are elaborated now, I suppose you wish me to assume?

Q.—Yes. *A.*—That where no action can be discovered that way, it still could have an action on a human being?

Q.—It still could have? *A.*—I mean, is that your question?

Q.—Yes, I asked that question. *A.*—I should say only through the imagination.

Q.—What is that? *A.*—Only through the imagination, I think. I could say that I think, without further qualification.

Q.—Did you test cactus pharmacologically? *A.*—Personally?

Q.—Or with any assistants? *A.*—No.

Q.—Or did you participate in such a test? *A.*—No.

CACTUS

Q.—Well, cactus was determined pharmacologically by your Society, or your Council as possessed of no therapeutic value whatever, was it not? *A.*—That was the conclusion, yes.

Q.—And an article to that effect was published in THE JOURNAL, was it not? *A.*—I think there were several articles to that effect published in THE JOURNAL, if I recollect.

Q.—And an investigation of its use among physicians showed after that time that it was used more than any other drug in their armamentarium. *A.*—Not to my knowledge, no.

Q.—Do you know anything about any investigation of that character? *A.*—I don't think so, Mr. Hough.

Q.—What is that? *A.*—I don't think so; it does not occur to me now.

Q.—Then, do you know that after you decided here that it had no therapeutic action under your pharmacologic tests, it was demonstrated in the pharmacologic institute of Berlin by Dr. Grever, that it had therapeutic action? *A.*—No, I don't think so, Mr. Hough.

Q.—You don't think so? *A.*—I don't think so.

Q.—You don't think what? *A.*—That it was demonstrated there that it had a therapeutic action.

Q.—Do you know the experiments that were made? *A.*—I think I know the experiments to which you refer. Well, I read a paper—I don't remember whether I read it in the original or in the abstract when it was published, and that must have been some four or five years ago, and I have not read it since, so I do not know how accurate my recollection of the details of that paper may be. The recollection—

Q.—Whether you agreed with the conclusions or not, it was reported at that Pharmacologic Institute that it had been determined there that cactus did possess therapeutic action. That was the effect and substance of that paper and report, was it not? *A.*—No, I would not say that.

Q.—Well, what was it? *A.*—My recollection of the general conclusion was that when used in large doses the particular drug that they were working with (which may or may not have been cactus)—

Q.—Which may or may not have been cactus? *A.*—Yes, sir, that is what I said.

Q.—Well, it may or may not have been cactus that you used here. *A.*—No, that was cactus. That was identified by competent botanists of the United States of the Smithsonian Institution, I believe it was, but the doubt on that subject is a very serious one, because there has been a great deal of confusion in the botany of cactus, a very great deal, and no work on cactus would deserve any consideration unless the species was definitely identified as the one that is supposed to be used in medicine.

Q.—Was that not definitely identified as cereus grandiflorous in that Berlin experiment? *A.*—Not that I recall.

Q.—Have you any reason to believe that in Berlin they would not be as accurate on that subject as in this country in the Pharmacologic Institute of Berlin? *A.*—That might easily be the case. There could not have been the great confusion that exists in that as we know it over here where the product has been more extensively employed.

Q.—All you now say is that you disagree with the conclusion (I you don't remember— *A.*—Oh, yes, I recall the work. It did not say that the drug had any therapeutic usefulness directly. That question was not touched in that piece of work at all.

Q.—Did it say that it had any action on the lower animals? *A.*—In very large doses it did produce a result on the animals, but as I explained yesterday, that does not necessarily signify that the drug has any therapeutic usefulness.

Q.—But it does show that it does have some action on the human being? *A.*—If used in adequate doses and so forth. If I recall the papers that were published on the cactus, on the part of the Council, they also, I believe, showed that if you used enormous doses you got some sort of an effect. My recollection on that is not clear, but that is my general recollection.

Q.—Is not this what THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION said— A.—I could not identify it, but if you have THE JOURNAL there and read it, then it is what it said, but I could not from my recollection of several years ago say whether what you read is what it said.

Q.—Do you recall that they said that it was absolutely inert on animals when used in a thousand times the amount of the dose on a human? *A.*—I don't recall, but that very likely is what they did say; I don't know.

DR. SOLLMANN'S BOOK

Q.—Doctor, in view of what you have testified to about the accuracy of deductions based on experiments on animals, what did you mean in your book, 1914 edition, under the head of "Effect of Drugs in Disease," when you said, "Animal experiments are of but limited value in this connection." *A.*—If you will read the remainder—

Q.—(Reading): "And we are forced to rely mainly on observation of patients."

Mr. T. J. Scofield:—What page is that?

Mr. Hough:—That is page 125.

The Witness:—If you will read that whole paragraph it will explain itself. I will try to give you an offhand explanation. It was written ten years ago, and agrees exactly with what I said yesterday.

Q.—Is it a fact that animal experiments are of but limited value in establishing the effect of drugs in disease? *A.*—That is what I said yesterday, too, Mr. Hough. That the effects in disease, as distinguished from the action, as I explained yesterday (drawing that distinction) might be different, and that would have to be determined by the direct trial, and that is why one could not tell from the fact that a drug had an effect on animals, that it would be a useful drug. I thought I explained that.

Q.—You testified yesterday that the action of drugs is the same, but the effect may be different? *A.*—Yes.

Q.—Well, now, you state in your book "The action of drugs is not the same in health and disease." *A.*—Exactly. It does not contradict it, strange as it may seem, and, if you read that whole paragraph, it explains itself as showing that here I used the term "action" rather loosely, which one often does. One often says that a drug has such and such an effect of course, and the drug has no effect. It has an action and that action produces an effect. Vice versa if one is not trying to draw the distinction between the two things, one often says "action" when one means "effect." If you will read this paragraph all the way through it will show. I happened to look it up last night.

Mr. T. J. Scofield:—Doctor, here is your book. Read the paragraph.

Mr. Hough:—Just let me finish.

Mr. Walker:—You have not any right to take the witness now. We have got the witness.

Mr. T. J. Scofield:—I have got the witness long enough to see that you don't—

Mr. Hough: *Q.*—You said yesterday that the action of the drug was the same, didn't you? *A.*—I said that the action of the drugs were the same.

Q.—Now, in your book there you say that the action of drugs is not always the same in disease, as in health? *A.*—Yes, and you are quibbling about a word there, Mr. Hough, which is fully explained in the context. It is the way in which a word is used. One can use the same word in different ways.

Q.—You mean when you testified on the stand, you meant the effect, and when you wrote the book, you meant the action? *A.*—When I wrote the book here, I meant the effect in the sense in which I explained it yesterday. I was not trying there to make a specific difference between the action and the effect, I was not trying to make that difference clear, and that paragraph explains itself, if you will read the whole paragraph, and the one following it.

Q.—I will read further from the paragraph. *A.*—You should begin at the beginning if you wish to get the meaning of that paragraph, and not begin in the middle.

Q.—I am going to read the next following paragraph. What I have just read is the first paragraph under the heading, "Effect of Drugs in Disease." *A.*—As it says—

Q.—The next paragraph says, "The differences are, however, as a rule, quantitative rather than qualitative." *A.*—Yes.

Q.—(Reading.) "Since drugs are in practice employed most extensively in disease, their action under those conditions is of the greatest importance. As a general rule it is possible to explain and even predict the action of drugs in disease from their action on normal tissues. However, the actual test must always be made. Animal experiments are of but limited value in this connection and we are forced to rely mainly on observation of patients." *A.*—Yes, of course, that is self evident, the reason for that. If we are going to see the effect of a drug in a disease, we must have that particular disease before us.

Mr. T. J. Scofield:—Read further there, read the whole paragraph, go right on.

Mr. Hough: *Q.*—You say this was written ten years ago? *A.*—That was written ten years ago.

Q.—In your preface, don't you say that this has all been rewritten? *A.*—Ten years ago it was rewritten.

Q.—In the 1914 edition, don't it say it has all been rewritten for the 1914 edition? *A.*—That title page there was absolutely a complete surprise to me. I may state as a matter of fact, that this book has not been revised or rewritten, or to my knowledge altered except that title page, since the year 1906. When I started to revise it I found that the subject at that time had so much advanced that I could more easily write an entirely new book, which is now in press, than to revise this. That is the reason why there has been no revision since that time, and that title page was put in there without my consent, and even without my knowledge, and when I saw it here a few weeks ago, it was a complete surprise to me.

Q.—Well, doctor, your book has a number of other mistakes in it. Have you discovered them in the new edition you are now working on? Have you discovered that there are a number of other mistakes in the 1914 edition? *A.*—I should not be surprised but what there would be quite a number of mistakes, but as I say—

Q.—I can hardly hear you. If you please, will you sit further out. *A.*—I cannot move the chair, Mr. Hough, it is nailed down.

Q.—Well, I will move forward then. *A.*—I rewrote it, and therefore, I would not be able to tell you whether I have corrected the particular mistakes that I made in this, or did not; I hope so.

Q.—Who wrote the statement that it had been thoroughly revised, and entirely rewritten for the 1914 edition? *A.*—No, sir, I did not.

Q.—Who did state that in your book? *A.*—That is the preface of the edition of 1906, Mr. Hough.

Q.—And it don't refer to 1914? *A.*—No, it does not.

Q.—Well, what about the young doctors who have been misled by these things in the book? They are misled, are they not? *A.*—They have not been misled by my fault, Mr. Hough.

THE COURT:—It is perfectly obvious that they will have to take their chances.

The Witness:—It is very strange what liberties publishers will occasionally take.

Mr. Hough: *Q.*—You mean, that was put in by the publisher, and not written by you? *A.*—No. That was put in by the publisher without ever consulting me, or telling me about it even. Of course the preface I put in in 1906.

Q.—Not rewritten, but in writing this new book you say you have rewritten this all again? *A.*—Yes, sir.

Q.—Well, in doing that, did you find that in a number of places you had misquoted the pharmacopeia? *A.*—I do not recall except one instance of that, and then it was not a quotation of the pharmacopeia, it was a synonym that got confused. I will be glad to have you call my attention to it.

Q.—I have a memorandum of it. *A.*—I will be glad to have it, and I will be sure to check them up.

Q.—Yes, I think that is important.

Mr. Walker:—Yes, help along the new edition.

The Witness:—Of course that might not apply, because that pharmacopeia will be out of print when the book gets published, I hope so, at least. Did you say I misquoted the pharmacopeia, did I understant you correctly?

Q.—I beg pardon? *A.*—Did you say I misquoted the pharmacopeia?

Q.—Yes, in the origin of plants, and in the percentages, the amount. *A.*—I would like to see that.

Q.—Well, for instance, on page 103 if you have your book. Would you like to look at the book, while we go over the mistakes?

THE COURT:—Mr. Hough, is the book on trial here?

Mr. Hough:—No, but the witness' accuracy is.

THE COURT:—He admits that he has made some mistakes in the book.

Mr. Hough: *Q.*—Doctor, in these pharmacologic tests which you made, the greatest accuracy is required, isn't it? *A.*—The greatest that is obtainable, Mr. Hough.

Q.—And if you make a little mistake, even of a small percentage, or the fraction of 1 per cent. in one case, it may make a totally

different result, may it not? *A.*—Oh, no, that all depends. It is the same story again as with the ton of coal and the carat of diamonds. Sometimes the fraction of a per cent. makes absolutely no difference, and in another case, it may make an enormous difference, just as with the diamond and the coal.

Mr. Hough:—I am willing to give the witness the benefit of the memorandum of mistakes that I have found, if he wants them.

The Witness:—I do not happen to see any pharmacological quotation—any pharmacopeial quotation on page 103.

THE COURT:—You are testing the witness' general knowledge. He may have made a few mistakes in that book, but he was asked certain things on his direct examination. Now, if he contradicts himself as to those, the point is important, or, if he contradicts himself in the book. But this is on a subject that is not at all allied with the matter before us now, that we are investigating. What difference does it make?

Mr. Hough:—Except to show the general method of work of the witness, who is testifying as to certain experiments which he has made, which require the greatest accuracy.

THE COURT:—If you deem it important, I am not going to stop you, but it seems to me that this Jury and the Court have a great deal to do besides that.

The Witness:—In that connection may I remark that page 103 does not seem to me to contain any quotation from the pharmacopeia whatsoever so far as I can notice here, and Mr. Hough calls my attention to misquotations from the pharmacopeia.

Mr. Hough:—That was the most insignificant one. In there you gave the botanical source of cochineal as coccus cacti, whereas the pharmacopeia gives it as false coccus cacti.

The Witness:—This is not intended to be a quotation from the pharmacopeia.

Q.—That is what you have there? *A.*—No sir. "Cochineal, U.S.P.—" I stop there and make a dash, and then give my own interpretation of what it is. It is not put in quotation marks, and in no way is it a quotation. It is simply my statement in a brief form of what that is, and, if the rest of them are that way, I would protest against their being called misquotations from the pharmacopeia.

Q.—You mean that you are making statements different from the pharmacopeia? *A.*—I may easily make statements different from the pharmacopeia.

Q.—But when you are doing so, after mentioning the pharmacopeia in such a connection that you would lead one to believe that that was in the pharmacopeia—

A.—I think anyone who is familiar with these books, the term "U.S.P." put after the name means nothing more than that the drug is contained in the United States Pharmacopeia, and that is where that part of the information stops. Whenever I quote from the Pharmacopeia, I follow the words "U.S.P." in connection with that particular quotation. For instance, when I say such and such a dose, "U.S.P."

Q.—Well, without running through them all, will you look at page 330, colchici semen is given as ".55" U. S. Pharmacopeia and you have it ".45" instead of ".55". *A.*—That is, in colchici semen?

Q.—Yes? *A.*—You say it is .45 instead of .55?

Q.—Yes? *A.*—That would be an error in that case.

DR. SOLLMANN'S EXPERIMENTS

Q.—Well, I won't run through all of them. Now, you made a test of Wine of Cardui on a dog in a saline solution? *A.*—No, I did not say that, Mr. Hough.

Q.—What did you say? *A.*—I made some tests on the uteri of guinea-pigs, and on the human uteri, but I made no tests on dogs personally.

Q.—No tests on the live animal at all? *A.*—None at all, personally.

Q.—And the only tests you made were by putting strips of uteri in this solution? *A.*—That was the extent of my personal experience, yes.

Q.—What was that test that had the straight line on? *A.*—The wavy line, you mean?

Q.—Yes? *A.*—That was on the human uterus, excised, human uterus.

Q.—The excised human uterus? *A.*—Yes.

Q.—I thought you connected that with a dog? *A.*—No, I was asked a hypothetical question in which I was to assume certain other work that had been done, beginning with excised uteri, I believe, and leading up to animals, dogs—excised human uteri and, I believe, a uterus in the living subject, and I was asked to give an opinion on those experiments, in connection with my own experiments, as to whether the drugs would have an effect on the uteri movements, or whatever it was.

Q.—When you put the strips of uterus in this saline solution, you don't tie it to any string, do you? *A.*—Generally put a little hook, or hook a pin into it, and tie it to a lever.

Q.—On a string? *A.*—On a string.

Q.—And it runs into the solution? *A.*—It runs into the solution, yes.

Q.—And then you put in that solution a certain amount of the drug, in this case Wine of Cardui? *A.*—That was the idea, yes.

Q.—Considering the amount of solution in which the amount of Wine of Cardui was put, and including the alcohol that was in the Wine of Cardui— *A.*—Yes.

Q.—the percentage of alcohol to the whole volume was about 2 per cent., was it not? *A.*—No, much less than that.

Q.—Less than 2 per cent? *A.*—I think so. I think the strongest concentration I used in the case of Wine of Cardui was 1 to 30, so that would be only 3 per cent. of Wine of Cardui, and one fifth of that is alcohol, so it would be one fifth of—I must start again. One fifth of 3 per cent, that would be three fifths—six tenths of 1 per cent.

Q.—Was that the experiment in which there was a depression which you thought was due to the alcohol? *A.*—That was in the fluidextract of cnicus benedictus, which contained a much higher alcoholic percentage of course.

Q.—That was the case in which you said the alcohol was present in about 2 per cent? *A.*—I think it came to something like 2 per cent.

Q.—And 2 per cent. of alcohol in that saline solution had an effect on the uterus which was appreciable? *A.*—Yes. Coming to check up the subject, it was 1.5 per cent, but I consider that immaterial.

Q.—So that if 20 per cent. of alcohol was brought in contact with the human uterus, it would have a much more marked effect, would it not? *A.*—If it was left in contact with it, Mr. Hough, it would have. If the human uterus was placed in the same solution, in the salt solution where the alcohol would stay in contact with it. Then it would have a marked effect.

Q.—Does the salt solution help the action of the alcohol? *A.*—No.

Q.—Then if you put alcohol, 20 per cent. solution, on the human uterus direct, without any saline solution, the effect would be very much more marked? *A.*—No, not necessarily. It all depends on whether it would stay there.

Q.—Whether it would stay there? *A.*—Yes.

Q.—How long would it have to stay there? *A.*—In the case of alcohol, to get that depression, it would probably require—to get a noticeable depression—something like several minutes probably.

Q.—Ten minutes? *A.*—It might be less than that, likely less than that I should say.

Q.—If it stayed there that long, there would be a marked effect, would there not? *A.*—I think there would be a marked effect in that case, yes, sir.

Q.—Now, is it not a fact that there is a difference between the action of a drug on a diseased, and a healthy uterus? *A.*—I think not Mr. Hough. I think I stated—

Q.—Did you ever experiment on a healthy uterus? *A.*—On a healthy uterus?

Q.—Yes. *A.*—Well, I considered those uteri practically healthy.

Q.—You considered all of them so? *A.*—I think so. One of them was carcinomatous but the part of the tissue that we took, was, of course, not the carcinomatous tissue.

Q.—Well, would it not make a difference how long it had been out of the human body? *A.*—Not in the direction of the results. The direction of the results would be the same. The extent of the results quantitatively will be a little different.

Q.—How long would you say that the uterus remains alive after being taken out of the human body? *A.*—If you place it on ice, and leave it on ice, and then put it again in the warm solution—

Q.—I did not hear that word. *A.*—If you place it on ice, so it does not putrefy, if you keep it from putrefying, and if you put it on ice, then you can revive it by putting it in the warm solution after five or six days under favorable conditions.

Q.—Five or six days? *A.*—Yes, sir, five or six days.

Q.—How long had each of these uteri been out of the body that you used? *A.*—I think they had been out of the body several hours.

Q.—Several hours? *A.*—Yes, and one we might have used the next day. I do not clearly recollect, but I think these tests were made—I have made some other tests with other drugs so my recollection on that point is not clear, but I think all of those were on the same day that they were removed.

Q.—Was that experiment made in Cleveland? *A.*—Yes, sir, that experiment was made in Cleveland.

Q.—Or here? *A.*—Cleveland.

Q.—How did you happen to get the strips, did they take them out for the purpose of the experiments? *A.*—Oh, no, Mr. Hough.

Mr. T. J. Scofield:—Speak out loud. *A.*—They did not, of course.

Mr. Hough: *Q.*—They were going to take them out anyway? *A.*—And the surgeon who took them out absolutely did not know that they were to be used afterward even. I got them from the pathologist.

Q.—Is it not an unusual thing to remove a uterus where there is merely a displacement? *A.*—It depends on the extent of the displacement I would not be in a position to discuss the details of those clinical cases, but I know that they were taken out for the good of the patient in the direct line of the surgical work. The way I got them is—after the uteri are taken out at the advice of the surgeon, they are turned over to the pathologists for microscopical examination of the tissues, and he takes out a small piece that he uses for that examination, and the rest of it is ordinarily destroyed. Now, I asked the pathologist, who goes to several of the hospitals, for this material; asked him, instead of destroying what he did not need, to put it on ice for us or bring it directly to the laboratory, where we could work with it.

Q.—Do you know whether there is anything in a saline solution, such as you use, which would interfere with the action of either carduus benedictus or viburnum prunifolium? *A.*—No.

Q.—Do you mean that you do not know, or that there would not be? *A.*—There would not be.

Q.—You are positive of that? *A.*—I feel positive of that, Mr. Hough.

Q.—Did you ever make any experiments to ascertain that fact? *A.*—I have made numerous experiments with the different kinds of drugs, and saline solutions of various kinds, and all the drugs that could give an effect—that did give an effect in the intact animal also gave an effect of the same kind in the saline solution. Therefore, the saline solution had no essential effect—I might almost say no effect of any kind—on the character of response or on the presence or absence of response.

THERAPEUTIC INCOMPATIBILITY

Q.—Well, there is such a thing as therapeutic incompatibility, isn't there? *A.*—Oh, yes.

Q.—And that means that one substance, drug or otherwise, might be mixed with another drug so as to absolutely neutralize the action of the other drug? That is a fact, isn't it? *A.*—Well, I don't know

whether as a scientific general proposition I could exactly agree with that, but I think I can agree with what you mean by the proposition. That is to say—

Q.—In general? *A.*—That most of the actions of the drug might be removed by another one. It is hard to conceive of one drug absolutely removing every action of another drug, but for practical purposes I am willing to grant that you may make that assumption.

SYNERGISM

Q.—That is the basis of what you call synergistic action? *A.*—Yes. Of course, as I explained yesterday, the extent of that is comparatively unknown, and one has no right to assume anything of that kind, unless it has been shown.

Q.—You mean about the synergistic action, or the incompatibility? *A.*—About what you call incompatibility there.

Mr. T. J. Scofield:—Will you talk a little more distinctly, I want the jury and everybody to hear you.

Mr. Hough:—Has there been any experimentation to determine the synergistic action of drugs? *A.*—Oh, yes.

Q.—That is, more than has been carried on to determine the therapeutic incompatibility? *A.*—You don't mean these particular two drugs. You mean drugs in general?

Q.—Yes. *A.*—Of course the experiments that were made along those lines were made so that they would show either synergistic or antagonistic action, what we call—well, never mind the term. Of course they have been made so that they could show either—the direction of the same experiments would show either one. I think on the whole, more instances have been found of the synergistic action than what you call therapeutic incompatibility.

Q.—Now, the synergistic action is best where the two drugs are generally indicated for substantially the same conditions. Isn't that so? *A.*—You mean, it is most pronounced, or you would employ it, or what do you mean, "it is best?"

Q.—Well, most effective, or possibly most pronounced. *A.*—You are using the term synergistic action—or we are using it for producing an action greater than would be produced by either drug alone in the same direction.

Q.—The sum total of the two drugs. *A.*—Yes. Of course the answer to that question follows from the question. You may get a synergistic action of those two drugs that act in the same direction. If they act in opposite directions, then of course you would not get a synergistic action.

Q.—It goes without saying that the two drugs should be indicated for the same condition. *A.*—Yes, sir.

Q.—And according to the writing on carduus benedictus in some of the authorities, they were indicated—carduus benedictus was said to be good for the same thing that viburnum prunifolium was good for? *A.*—I don't believe I could agree to that. With all my reading on the subject I have not found a very clear idea as to the exact condition for which either of those drugs were indicated, and therefore I could not say really whether they were indicated for the same condition.

Q.—Well, suppose we use words. They were said to be good for menstrual disturbances. Those words were used, were they not? *A.*—Yes.

Q.—And said to be good for womb trouble. Those words were used, were they not? *A.*—Yes, sir. Shall we start on one of these, or do you want to give me the whole list?

Q.—I am talking about carduus benedictus. *A.*—Very well.

Q.—And it was good for inflammation of the womb? *A.*—Yes, sir.

Q.—And it was good for—

Mr. Walker:—He answered with a nod.

The Witness:—Yes, sir.

Mr. Hough:—So that in a general way and in that sense the literature recommends it for the same thing that the literature recommends viburnum prunifolium for, without reference to whether they have any action or not in your opinion, or in anybody's else opinion? *A.*—Yes.

Q.—They do, don't they? *A.*—I think we make some very broad assumptions in that, in assuming that they are recommended for the same thing. They recommend it, you might just as well say—you might just as well say that a drug is recommended for a headache to illustrate and give you an example that is sufficiently broad.

Q.—Well, maybe I can make it plainer. The same words are used in the book—

Mr. T. J. Scofield:—I did not understand that answer. Please read it.

(The answer was then read.)

Mr. T. J. Scofield:—Now what else, let him finish.

Mr. Hough:—That was not responsive anyway.

The Court:—Go ahead, Mr. Hough.

Mr. Hough: *Q.*—The carduus benedictus, to go back to words again then, is used or recommended in books or said to be good in books, those books that you read, for menstrual disturbances of women? *A.*—Yes.

Q.—And for womb troubles? *A.*—Yes.

Q.—And viburnum prunifolium is said also to be good for those same things, isn't it? *A.*—Yes, I assume that.

Q.—Now this synergistic action that I referred to would mean that when one was added to the other the combined effect was more than the addition of the co-efficient would it not? *A.*—I get the idea, yes.

Q.—That is true, isn't it? *A.*—That is the definition.

Q.—That is what is meant by synergistic? *A.*—I accept your definition. I think it is a very good one.

Q.—Now that condition is usually true with reference to two drugs that are mentioned for the same thing. You say of course they must be mentioned for the same thing? *A.*—That have the same kind of action. You are mentioning, for instance, the menstrual disorders. One thing may act on menstrual disorders, using the broad term you are using, in the one direction, and the other might act in an opposite direction. Those two things would not be synergistic, they would be antagonistic.

Q.—You mean they produce the same results by different means, is that what you mean? *A.*—No.

Q.—You mean that, to be synergistic, they must produce the same results by similar actions, similar properties? *A.*—Something of that kind.

Q.—If they produce the same results, but by dissimilar action, you would say then it is not synergistic? *A.*—They might still be synergistic in a sense. It depends—it must be an action in the same direction, however, or it becomes, by your very definition, an antagonism.

Q.—Now, have you ever made any experiments for the purpose of determining what would be the synergistic action of 6 grains of viburnum prunifolium to 30 grains of carduus benedictus to the fluidounce? *A.*—Before you add something you must have something to add. Now my experiments showed that you did not have any effect from the viburnum prunifolium, and you did not have any effect—

Q.—So you have made no experiments of that kind? *A.*—No.

Q.—Then that is all that is necessary. Have you ever heard of any other experiment— *A.*—May I explain why I did not make them, Mr. Hough? May I explain why I did not make them?

Mr. Hough:—One moment. Did I say 6 to 30?

The Reporter:—Yes.

Mr. Hough:—Well, that should be 60.

The Witness:—All the same. Now may I explain why I did not make them?

Q.—Well, as you have not made them, that is all that is necessary. Doctor, carduus benedictus is one of the highest priced drugs imported into this country, isn't it? *A.*—Carduus benedictus?

Q.—Yes, highest priced? *A.*—Why not according to what I have been told about it; I do not have any direct personal knowledge of it.

Q.—Haven't you read the report of the Department of Agriculture as to drugs, weeds and herbs, used in medicine? *A.*—I read that quite a while ago.

Q.—Didn't that state that it was more expensive than digitalis? *A.*—That I could not tell you, but that still would not make it one of the highest priced drugs imported into this country.

Q.—I don't mean highest priced drugs; I mean herbs, used as drugs. *A.*—Herbs used as drugs?

Q.—Yes. *A.*—If you use the term "herb" technically, which comprises only relatively a small number of drugs, that may be true for all I know. If you mean crude drugs, plant drugs, that certainly would not be true.

Q.—It is more expensive than digitalis, which is fox glove, isn't it? *A.*—I could not say whether it was or not. It depends of course on the quality of digitalis leaves. I know we have paid quite high prices for some good quality digitalis leaves, and I doubt very much whether the other would come within a small fraction of that price.

EFFECTS ON ANIMALS AND MAN

Mr. Hough:—Doctor, how many drugs, if you know, have an important or positive effect on man, which do not have the same effect on animals? *A.*—The same effect, Mr. Hough? No, I would not say—I would not say off-hand that there are any. That is a pretty broad sort of question, without having any particular instance in mind.

Q.—Then let me put it more concretely. Potassium iodid has no action on a dog? *A.*—Oh, yes, it has, Mr. Hough.

Q.—In what way given? *A.*—Given in any shape or manner whatsoever.

Q.—Has that been tested on a dog? *A.*—Yes.

Q.—In what way was it tested? *A.*—It causes—for instance, I know—I made some experiments myself in that direction, and also experiments have been published a long time ago; when it is injected by stomach tube, it produces, in adequate doses, a pleural effusion, accumulation of fluid in the pleural cavity, over the lungs. That is one effect in particular that I know has been produced.

Q.—Well, that is used for gumma in men, is it not? *A.*—Yes, for certain syphilitic lesions.

Q.—Now, does the experiment on the dog indicate such use on a man? *A.*—I don't believe, Mr. Hough, that you would simply, from watching that action, think of its—of using it in gumma on man. But I believe that it tends to explain the mechanism of the action on man. Do you wish some other instance of its action on animals, Mr. Hough?

Q.—Does that explain its effect on gumma? *A.*—On gumma only?

Q.—Yes. *A.*—I would not say off-hand that the experiments that I have in mind explain it. They might have some bearing upon it. But they explain its therapeutic use, if you desire that.

Q.—Is it not a fact that rabbits may be fed for weeks on belladonna without showing any symptoms at all? *A.*—No, I would not say that, Mr. Hough—without showing any symptoms at all.

Q.—What would you say on that? *A.*—They would get a dilation of the—

Q.—Let me put it this way—I withdraw that question. How long may rabbits be fed on belladonna leaves without showing any symptoms? *A.*—That depends upon the dosage, how much they would eat, etc.

Q.—Are you familiar with Cushny's statement on the subject? *A.*—I may have read it a long time ago. I have not read Cushny's book since—in general since a long time ago, and not on that subject, I know.

Q.—Is there anything in your book on the subject? *A.*—There may be. Not as you put the question, Mr. Hough. The statement, as I would think it was in my book—I have not looked it up recently—would be to the effect—at least that would be the intention of it, though I don't recall the wording—that animals can be fed on bella-

donna—rabbits, you are speaking of, and, curiously, fed on belladonna leaves exclusively, and raise litters of young even, on that ordinarily poisonous diet, and yet remain alive. It does not show—it does not mean that there is no effect upon them. There is a quite distinct effect on them; and the reason why it has no effect is—I mean no fatal effect—is also quite interesting, that is known to a certain extent that I could explain, if you desire.

Q.—They use it as a food—the rabbits use it then as a food? *A.*—You give it to them as a food, and make them use it. I don't think they would spontaneously use it that way.

Q.—Well, do they object to using it as a food? *A.*—According to my recollection, I don't exactly know. I suppose, since they can be kept alive on it, they would have no very serious objection to it.

Q.—I mean they don't show aversion to it? *A.*—I don't know, Mr. Hough, at first, whether they do or not, but evidently, eventually they eat it.

Q.—How much is the dose for man, of belladonna leaves? *A.*—Of belladonna leaves?

Q.—Yes. *A.*—I could not give you that off-hand, Mr. Hough. I should imagine possibly something like 2 or 3 grains.

Q.—Is it not just 1 grain? *A.*—It might be 1 grain. Of course, the dosage of those things varies to some extent. In some conditions you employ larger doses and in some smaller. But it might be very well 1 grain—

Q.—That is the average dose given in the pharmacopeia, is it not? *A.*—I don't remember; but if you state so, I will very willingly accept your statement.

Q.—Speaking of the pharmacopeia, when the pharmacopeia—when the Pure Food Law was passed, there had to be a number of changes in the pharmacopeia, didn't there? *A.*—I don't know about that, Mr. Hough whether there had to be any changes in it or not. That was before the time that I was connected with the pharmacopeia, I think—

Q.—Well, but— *A.*—In any way.

Q.—Haven't you a copy of the revised edition of 1907? *A.*—Yes. Now, when you mention it, I believe there had to be some little corrections, with a book of that size—

Q.—Well, there were more than 150 changes that had to be made in the pharmacopeia? *A.*—That, Mr. Hough, is scarcely a fair statement of the situation. That is to say, the same change had to be made often, quite a number of times. The real changes, if you do not count the number of times that the same statement is repeated, is not so many. I have no personal knowledge of it. Now take this number of changes and they would be considerably less. I have a vague idea of hearing Professor Remington say it was small, twenty or thirty; but I might be mistaken. My recollection is vague.

Q.—But whatever the number was, they were all included in a little pamphlet that was sent out, after they were agreed upon by the committee, to those who already had the pharmacopeia which had come out two or three years previous? *A.*—I do not know about that, Mr. Hough. I had several copies of the pharmacopeia, and I do not remember of receiving a pamphlet. It might have been sent. I do not remember, at least.

Q.—Then they were all embodied in a reprint and revision of the Pharmacopeia of 1907? *A.*—So I believe; or some such year; I do not know the year.

Q.—And these changes were necessitated by the passage of the Food and Drugs Act? *A.*—That was the occasion for them at least; but, really, Mr. Hough, I could not give you any information of any value on that subject, because I was not at all connected with it.

Q.—Can you think of any other drugs or substances which have a pronounced or lethal effect on man, which have no such effect on the lower animals? *A.*—I have not thought of one yet, Mr. Hough. You have not given me an instance, and I have not thought of any.

Q.—If you should inject some castor oil into the buttocks of a dog, what effect would it have? *A.*—I have not the slightest idea.

Q.—It would not have any effect at all, would it? *A.*—I do not know. I haven't the slightest idea.

Mr. T. J. Scofield:—Your Honor, we have been very patient here in listening to a lot of interrogations that are not suggested by the examination in chief at all, or by anything that was brought out in the examination in chief.

THE COURT:—I did not hear the question, Mr. Scofield.

Mr. T. J. Scofield:—He wants to know what would be the effect if you inject castor oil into the buttocks of a dog.

THE COURT:—He may answer.

Mr. Hough:—I want to take issue with Brother Scofield's statement that it is not material to anything brought out on direct examination. It is directly in point, in view of the witness' statements on direct examination.

Mr. T. J. Scofield:—From no standpoint is it material.

THE COURT:—He may answer:

To which ruling of the Court, the defendants, etc., excepted.

Mr. Hough: *Q.*—Well now, then, that would not prove, if that had no effect, that castor oil would not be good in a man, would it—in a human?

Mr. T. J. Scofield:—The injection in the buttocks, Mr. Hough?

Mr. Hough:—Yes; but I will let him inject it into any other part of the anatomy of the dog that he likes—for the purpose of answering the question.

The Witness:—If I had my way, Mr. Hough, and I wanted to determine the effect of castor oil on a dog, I would naturally give it by mouth, as the only way in which I would naturally think of giving it, that is, to act on the alimentary canal.

Mr. Hough: *Q.*—Did you ever give any other medicines to a dog by the mouth? *A.*—Oh, yes.

Q.—In testing them? *A.*—Yes.

Q.—Which other ones? Which have you given, I say? *A.*—Which have I given by mouth?

Q.—Yes. *A.*—Emetics and cathartics, in the first place, I naturally give those by mouth. Iodid I have already mentioned as a drug I have given by mouth. There is a large list I could not think of off-hand, but if you give me a list of drugs, I might remember what I have used. But it would be difficult to choose out of the large number of drugs, off-hand, and tell you those I have used by mouth and those I have not. It is a large list.

Q.—There are drugs, doctor, that can act on conditions—diseased conditions in the female pelvis, without acting directly on the muscle of the uterus; are there not? *A.*—That could act on the female—on the—

Q.—Diseased condition in the female pelvis, without acting— *A.*—Directly on those?

Q.—Without acting on the muscles of the uterus? *A.*—They might act on the blood vessels.

Q.—That would be taken through the mouth then, wouldn't it? *A.*—Through the mouth?

Q.—They would be taken through the mouth? *A.*—Might or might not.

Q.—For instance, a medicine which was—is an hepatic stimulant acts best taken through the mouth, doesn't it? *A.*—The term "hepatic stimulant" is a little vague to me Mr. Hough. If you could explain to me just what you mean by that—it is a term which is used here—I might be able to answer your question more intelligently.

Q.—Well, I am using words in medical literature, and I supposed you would understand the sense in which it was used. *A.*—I do not know whether—I do know ordinarily—

Q.—Well, if you don't—if there is a medicine which acts on the portal circulation, that would act best if taken through the mouth, wouldn't it? *A.*—It all depends upon the way in which it would act on the portal circulation, Mr. Hough. These are very indefinite ideas that you are dealing out here, and so I can only answer them in an indefinite way, by saying it might or might not. You will have to get a little more definite—if you want me to assume a definite case, or you want to present a definite case to me, but you will have to be a little more definite—

Q.—I am leading to the question which I asked before, which is: That there are other ways of medicines acting on this diseased condition in the female pelvis, than acting directly on the muscle of the uterus? *A.*—I so stated in the direct examination.

Q.—And when those medicines are given to act in that way, they are given best through the mouth, are they not? *A.*—In that particular way that I think you have in mind.

Q.—Doctor, you are a chemist, are you not? *A.*—Oh—to a certain extent at least, Mr. Hough.

Q.—Suppose you were given a chemist's report which says of a certain medicine or compound that it is a dark brownish liquid having a neutral reaction, a peculiar valerian-like odor and a bitter mawkish taste; arsenic, bromids, iodids, the potent alkaloids such as aconitin, morphin and strychnin, or the emodin-bearing drugs such as aloes, cascara and senna were not found. Potassium bitartrate (cream of tartar) was absent, thus indicating the absence of wine from grapes. Alcohol was determined and 20.36 per cent. of absolute alcohol by volume was found. The volatile matter amounted to about 97 per cent.— *A.*—97 per cent.?

Q.—Volatile matter. *A.*—Yes.

Q.—The nonvolatile residue appeared to consist of vegetable extractives. This had a bitter taste, and gave very faint reactions for alkaloids. The quantity of alkaloid was too small to possess any appreciable medicinal effect, whatever its potency might be. Small quantities of a nitrate were present. A trace of combined ammonia also was present. Could you state from that report what the herbs or drugs were from which that medicine was made?

Mr. T. J. Scofield:—If the Court please, I object to the question. If he wants to ask him the question—or ask him a question based on the chemical analysis, let him read it all, and not a part of it, and omit some of it.

Mr. Hough:—I have omitted only the comments. I have stated the facts.

Q.—I say, from those facts, could you state, or could any chemist state what the ingredients were, from which that medicine was made, other than the alcohol, which, of course, is indicated—specified? *A.*—Stating the results as you do, Mr. Hough—

Q.—What is that? *A.*—Stating the results as you do—

Q.—Yes. *A.*—Assuming these to be the things, I don't believe any one could say from that alone what particular drugs had been present there. You could say a large number that had not been present—a large number, very large number; but you could not say what particular drug, devoid of these active constituents might or might not be here.

Q.—And that would still leave a large number of drugs which might still be in there; I mean, excluding those which are specifically excluded. *A.*—Stating the thing without any other knowledge of the preparation, that I think would have to be said.

Q.—Now, when did you first learn that Wine of Cardui contained carduus benedictus and viburnum prunifolium? *A.*—When did I first learn that? My first knowledge of the subject at all came in the article from which I take it you are practically quoting.

THE COURT:—You mean the article in the American Medical Journal?

The Witness:—The first article in THE JOURNAL of the American Medical Association. That is the first I knew about the carduus benedictus at all.

Whereupon an adjournment was taken until 2 o'clock p. m. of the same day, May 10, 1916.

May 10, 1916, Afternoon

TESTIMONY OF DR. TORALD SOLLMANN (*continued*)

The Court met pursuant to adjournment. Dr. Sollmann resumed the stand for the defendants.

FURTHER CROSS-EXAMINATION BY MR. HOUGH

Dr. Sollmann testified that he first learned of the presence of carduus benedictus and viburnum prunifolium in Wine of Cardui when he read the article in THE JOURNAL. He could not tell absolutely from that article that such were the contents, but the article suggested strongly that these substances were there. His next information on the subject came in a conversation with Mr. Scofield in which he heard the deposition of Mrs. McElree. His next information on the subject came from reading the papers of the Chattanooga trial in which it was stated that it had been admitted for the purpose of that suit that there were contained in Wine of Cardui as essential ingredients carduus benedictus and viburnum prunifolium in the combined quantity of 66 grains per ounce. His next information came in a letter from Dr. Leech in which the latter stated that he had prepared a synthetic formula corresponding in analysis to Wine of Cardui.

SYNTHETIC PREPARATIONS

Q.—Doctor, couldn't you make a synthetic preparation out of other material than those two, which would compare exactly chemically with Wine of Cardui, and which did not contain any carduus benedictus or viburnum prunifolium? *A.*—By the exercise of considerable skill, and having an exact analytical scheme in mind, such a thing might be more or less remotely possible. It all depends upon how many data you have before you can see if you can match it. The hypothetical question that was asked me on that account assumed the presence of certain things which were found in this synthetic formula A and in no other.

Q.—Is it not a fact that one could extract a mixture of gentian and chiretta, with 20 per cent. alcohol in your product, yielding three to three and a half per cent. of residue when extracted, then adding a small amount of oxalates, a trace of valerianic acid, a trace of alkali, a trace of potassium nitrate, of citrates, malates; and then subject this product to the same chemical examination to which Wine of Cardui was subjected in the laboratory of the American Medical Association. Wouldn't the analytical results be the same as for Wine of Cardui, though, as a matter of fact, there was no carduus benedictus or viburnum prunifolium in it? *A.*—May I ask a question, what the two drugs were that you assumed there?

Q.—Gentian and chiretta. *A.*—Gentian and—

Q.—Chiretta. *A.*—Oh, yes. Corresponding to which analysis, Mr. Hough?

Q.—The one that was testified to, the one that was made in the laboratory of the American Medical Association. *A.*—I want to get the question right, Mr. Hough, as I believe there were several analyses testified to in regard to that.

Q.—Well, compare it with the one that was read to you here, with which you were to compare the synthetic medicine. *A.*—I don't believe so, Mr. Hough, not in all respects, possibly in the respects that you name, but not in all the respects that were intended in the question that was asked of me.

Q.—Now, in what respect would it differ? *A.*—I would have to review that question. And I do not know as I could definitely tell then in what respects it would differ. I say it is inconceivable to me that it would agree in all respects. You have added certain particular things to it now, and those particular things you might possibly—I don't say you would, but you might possibly make it agree in those particular things. That, however, you could strike on such a thing accidentally, that, of course, is an entirely different question. But I am granting that you might make it agree in those respects—but that you also having made it agree in those respects, make it agree in all the other respects, that I cannot possibly conceive.

Q.—Then, because the chemical analysis of the two—that is the Formula A and the Wine of Cardui—appeared to be identical, it would not necessarily follow that Formula A was made of the same ingredients that Wine of Cardui was made of? *A.*—It would follow as necessarily as the laws of probability admit, Mr. Hough.

Q.—Well, you have just said, haven't you, that it would be possible to have it made out of something else? *A.*—It would be possible, but it would be inconceivable.

Q.—Well, how is a thing that is possible inconceivable? *A.*—This way, Mr. Hough: Now it is perfectly possible that, coming out of the court here and going across the street, I might find a bag with a million dollars on the street. Now, theoretically, that is possible. At the same time it is absolutely inconceivable.

Now, in just the same way, it is possible that I might on the first trial of this kind strike a combination that agreed in every respect—you would, if you tried it—with all of the things that have been named —that cnicin-like residue, the products of the distillation, the reaction of the distillate; in all these respects, that it would agree, is theoretically possible, in just the same way as it would be possible for me to now cross the street and pick up a million dollars lying in a bag on the street.

Q.—Well, instead of inconceivable you mean probable, don't you? *A.*—Well, as you like to use the terms. But the analogy is fairly perfect in my mind, whatever terms or words you apply to it—that is perhaps a matter of choice.

Q.—Can you think of any other method from which a synthetic product could be made up which would analyze chemically the same as the analysis of the Wine of Cardui, which was read to you in direct examination? *A.*—I could not say, Mr. Hough. By feeling around I might try to construct such a formula, but I certainly could not say offhand what might be used. I do not know of anything that would give a cnicin-like residue, except the thistle species; that is all I know of, or have heard about—that would give a residue of the cnicin-like characters which I understand I was asked to assume are discovered in this mixture.

Q.—Don't you think the power of suggestion was the controlling thing in your mind? *A.*—No, I don't think so, Mr. Hough.

Q.—You don't? *A.*—No.

Dr. Sollmann was then asked concerning his comparison of oats and straw to carduus marianus and carduus benedictus. He stated that when he made this comparison he had in mind that an action had been attributed to carduus marianus on the basis of certain clinical observations which action had not been determined in carduus benedictus. He had not read Shoemaker or Reel.

The witness has not made any experiments on carduus marianus to determine its medicinal value. The witness could not tell the difference between cnicus marianus or cnicus arvensis. The latter is mentioned in his book, which is a book of reference. He is not personally acquainted with every drug mentioned in the book.

Q.—How did you happen to put in cnicus arvensis, and not put in cnicus or carduus marianus or benedictus? *A.*—I could not tell you that. I mentioned that in my book, in a list of bitters that had been used in domestic medicine, and that I considered of no particular value, and therefore I did not particularly take much pains to study more about them. I think I said so in the book.

Q.—Is that the reason you put viburnum prunifolium in the book, that you did not consider it of any particular value? *A.*—I don't put things in just because I consider them of no particular value. I did not put that in because I considered it of no particular value.

Q.—When you put viburnum prunifolium in this book, you thought it was of some value? *A.*—I doubted it.

Q.—You doubted it? *A.*—Yes.

Q.—But you put it in as good for menstrual disturbances and as a uterine tonic and sedative, didn't you? *A.*—No.

Q.—Did you put it in as a uterine sedative? *A.*—I put it in, Mr. Hough, because I was giving information there about what various drugs were used for. In the case of some drugs I had personal experience with them, and I gave that; in the case of other drugs, the reading that I had done on the subject, or the work I studied convinced me it was a good drug, and then I stated so. In the case of other drugs, I put them in, and the reading had not particularly convinced me, because I had no particular—made no particular study of the literature, or because the literature was so unconvincing and not decisive; in that case I simply made a statement of the uses to which it was put, and qualified that, if necessary, by what I thought about it, further. And it was in that way—

Q.—That is, it had not been proven pharmacologically? *A.*—It had not been proven pharmacologically, yes.

Q.—You stated— *A.*—Or clinically, as the case may be. If I knew it had not been proven clinically, or rather that it is practically valueless clinically, I would say that.

Q.—But, putting it in the book was suggesting to the student coming on to use it if it is necessary, wasn't it? *A.*—No, Mr. Hough.

Q.—What was your book written for? *A.*—Just information about things that are of known use.

Q.—Information to whom? *A.*—Students and practitioners. It is a reference book.

Q.—I beg your pardon? *A.*—It is a reference book, as well as a textbook.

The witness was then questioned concerning his assumption in the hypothetic question. The witness stated that he had assumed what the question had asked him to assume regardless of his belief. He has heard of other experiments made with the drugs mentioned all of which were negative with the exception of one experiment performed on the uterus of a virgin cat on which there was an action in large doses like the toxic action of ergot.

The witness was then asked in detail concerning the experiment which he performed on the guinea-pig. He stated that the uterus removed from the body and sliced in strips, in its response to the action of drugs, is the same as the uterus in a live woman's abdomen. This would be dependent on the condition under which the uterus is kept. The witness does not know of any medicine which acts on the uterus through the spinal cord.

The witness was again asked concerning his assumption in the hypothetic question and he stated that he assumed the actions that were submitted to him without assuming anything else about the constituents.

The witness stated in response to a question that under certain conditions alcohol in Wine of Cardui would make

the medicine inadvisable in female troubles and this would be true as a general proposition.

The witness was asked to name pharmacopeial preparations of which a person could take such an amount as would create intoxication. He mentioned whisky and brandy, also simple elixir. Taken in doses prescribed in the pharmacopeia he would not regard them as usually intoxicating although they might produce alcoholic effects.

ALCOHOL AS A FOOD

Q.—Is not alcohol a food, up to a certain extent, a certain per cent.? *A.*—Up to a certain per cent.—the percentage question has little to do with that, nothing to do with it.

Q.—Has nothing to do with it? *A.*—No.

Q.—What do you mean in your book by limiting it to 20 per cent.? *A.*—I don't recall that I did, Mr. Hough.

Q.—What is it? *A.*—I don't recall that I so limit it.

Q.—Reading from your book, page 414: "Small amounts of weak alcohol taken at meals cannot, therefore, have a bad effect upon digestion, and may even act favorably. The alcohol should not be taken in strength greater than perhaps twenty per cent." *A.*—From your reading, I hear nothing about food.

Q.—I am talking about whether or not the per cent. is indicated—you said it had nothing to do with it. Why, then, did you limit it to twenty per cent.? *A.*—That was the question of food, Mr. Hough. Your question applied to the food of the alcohol. Now, I tell you why I limit it there to 20 per cent. is because you are speaking of the local action on digestion there.

Q.—I was asking you about whether or not alcohol, in certain proportions, would be regarded in certain doses as intoxicating, or non-intoxicating; and I understood you to say that the percentage had nothing to do with it, that is, the dilution. *A.*—Not of intoxication, that is correct—but it does not say anything about intoxication there.

Q.—Now, in what connection and in what sense did you make this statement? *A.*—In the statement that you just read?

Q.—Yes. *A.*—That was in regard to its effects upon digestion, as you read it there.

Q.—Why did you limit it to 20 per cent.? *A.*—Because stronger concentration disturbs or tends to disturb digestion.

Q.—Then the percentage has something to do with it, hasn't it? *A.*—It has something to do with the effect on digestion, but you did not ask me at all about that; and I am trying to be responsive.

Q.—You say you were not asked about it— *A.*—Not in what you read.

Q.—What does this sentence mean: "By the chemical energy thus liberated alcohol can perfectly replace carbohydrates and fats in the diet, and is a typical non-nitrogenous food." *A.*—Yes, Mr. Hough, but—

Q.—Yes. *A.*—Now, may I discuss that a little?

Q.—Certainly, discuss it at your leisure. *A.*—In the first place, Mr. Hough, you started out from a question you asked me, what effect the alcohol would have—if I perfectly recall it—as a food, in certain dilutions; and I said the percentage has nothing to do with it; we are speaking of the food question; and I repeat again, that, as far as the food question is concerned, the concentration of the alcohol has nothing to do with it.

Then you read me a paragraph as to the effects of alcohol upon digestion, in which the concentration has something to do with it. Now, you have not asked me a word about digestion. You had asked me about its action as a food.

Q.—You said you were not talking about it as a food. *A.*—I am trying to be responsive to the question. I am perfectly willing to reply to any question you ask me, only you must ask it. Now—

Mr. Hough:—Now, I will ask you—

Mr. T. J. Scofield:—Let him finish.

The Witness:—Now, you come and read me a part of a sentence—I think it is a part of a sentence—but let me call it a sentence, if necessary, out of a paragraph; and, if you will have the kindness to read that paragraph through, you will see what I said about the subject of alcohol in the year 1906; and if you want to ask me directly about my present opinion as to the effects of alcohol as a food, I am perfectly willing to give you this—whichever you want, or both.

Mr. Hough: *Q.*—You mean this was a statement you made in 1906? *A.*—That was a statement I made in 1906.

Q.—And what you said in 1906 is now no longer true? *A.*—No. What happens is, my present opinion entirely agrees with what I said in 1906.

Q.—If it is your present opinion that it was not the truth at that time, you were giving misleading information, weren't you, to the students? *A.*—One gives the best information that one can in the stage of the science at that time—

Q.—Of course. *A.*—but Mr. Hough, that statement is perfectly true, if you will—

Q.—Why did you, reading this language—

Mr. T. J. Scofield:—Let him answer—

Mr. Loesch:—Let him finish.

Mr. Hough:—My, what a chorus.

The Witness:—But what I am asking you to do, Mr. Hough, is not to take out a part of a quotation, but to give the whole text. You know the old proverb about who can quote scriptures to suit his purposes—but I want you to give the whole text. Now, if you will be good enough to read that whole paragraph—and I do not remember whether the other paragraph is necessary to that, but I think the one paragraph at the bottom of that page, and the first part of the next page, you will get perfectly my opinion in the year 1906, and it expresses perfectly my opinion in the year 1916.

Mr. Hough: *Q.*—It is still your opinion then? Your opinion has not changed? *A.*—It has not changed.

Q.—I understood you to say it had changed. *A.*—No.

Q.—Now, I will read the rest of it: "It is even superior to other foods—." *A.*—Might I be permitted to have a copy of the book before me, when you read, Mr. Hough, so I can see—

Q.—Your counsel has a copy of the book, and you can follow me.

Mr. Walker:—Be sure you read it right.

The Witness:—I don't doubt but that Mr. Hough will read it right, only I want to get in all that particular place there about it.

Mr. Hough: *Q.*—Now, after "non-nitrogenous food" you say: "It is even superior to other foods in one particular, viz., in that it does not require digestion." *A.*—Yes.

Q.—You stated that? *A.*—Yes.

Q.—Is it a fact that it is superior to other foods? *A.*—In that respect.

Q.—Now, I skip down to— *A.*—No, no, Mr. Hough, I would not skip; I would not agree to that—I understood I was promised—I was desirous of having you read the whole thing, and I don't like the skipping after the promise was made.

Q.—Very well, I will read it all: "By its poisonous side-actions, however, it may at first cause an increased nitrogen excretion in individuals not accustomed to its use; but this action disappears in a few days, and it then saves nitrogen, like any other food." Does that suit you better? *A.*—That is what I want. Now, the remainder of the explanation comes in the large print on page 415, the first paragraph there, if you will read that.

Q.—It says: "Whilst there can be no doubt that alcohol is an excellent food in the sense of being a source of energy, other factors must be taken into consideration," is that the thing? *A.*—Yes, that is proper.

Q.—Now, you do say— *A.*—Oh, the rest of that paragraph, if you please; that whole paragraph.

Q.—All right. "The increased nutrition may itself be detrimental to the body, either by preventing the complete combustion of metabolites, which may possibly be connected with the origin of gout, or by leading to an abnormal deposition of fat. A still more potent objection to considering alcohol as a generally useful food lies in its toxic action, especially its psychical effects. Alcohol can therefore be employed as a food only when a sufficient supply of energy cannot be obtained from an ordinary diet; as, for instance, in digestive disturbances, or when the demands on the organism are unusually large, as in fever." *A.*—I think that sufficiently covers my opinion on the subject. I would be glad to explain it further if it requires any further explanation.

Q.—Now then, what do you mean when you say "Alcohol should not be taken in strength greater than perhaps 20 per cent."? *A.*—On account of the local effects on the gastro-alimentary canal.

Q.—Then, if not taken in quantities greater than 20 per cent., it would not have that effect— *A.*—It would—let me get that question.

Q.—Wouldn't that effect— *A.*—Let me have the question.

(Question read.)

A.—It would not have that deleterious local effect; that is right; yes, sir.

Q.—Now, is it a fact that you recommend alcohol in any inflammatory conditions? *A.*—In any inflammatory conditions? I could not say off-hand, Mr. Hough, whether I did or did not.

Q.—What does this mean, on page 416: "Use in fever, chills, inflammatory conditions, etc."? *A.*—Yes.

Q.—Does that mean that you recommend it in inflammatory conditions? *A.*—In certain kinds of inflammatory conditions.

Q.—Now, on the next page, 417: "In convalescence and general debility"— *A.*—Yes.

Q.—"The value of alcohol in these conditions is established by long experience." Is that a fact? *A.*—I think so. Let me see now, whether it is necessary to read the rest of that, to explain it, Mr. Hough.

Q.—Now then—well, you can read it if you like. *A.*—I think that is self explanatory. I will be glad to read it if you wish.

Q.—Now, did you say that 48 drops of alcohol, in a 20 per cent. solution, in a single dose, is intoxicating? *A.*—I say in a certain sense you can say it is intoxicating, but I would not say in the sense that "intoxicating" is commonly used; no.

Q.—Then you say it is nonintoxicating? *A.*—In the sense it is generally used.

Q.—In the ordinary sense? *A.*—Yes; in that dosage.

Q.—Did you make any experiments for the purpose of determining how rapidly the solid extracts from either cardiuus benedictus or viburnum prunifolium deteriorate? *A.*—No; and I would not know how to make such experiments, really.

Q.—Why does the pharmacopeia not make all their fluidextracts in solid form? *A.*—Because some people prefer to prescribe them in liquid form, I suppose.

Q.—Don't you say it is a good deal better in liquid form? *A.*—It may be, under certain circumstances, a good deal better in liquid form, yes, sir.

Q.—And will keep better? *A.*—That depends upon the drug.

Q.—Some drugs will keep better? *A.*—Some drugs undoubtedly will keep better in liquid form. Others undoubtedly will keep better in solid form.

Q.—Haven't you written, or stated, that medicine in tablet form is not scientific medicine? *A.*—I do not know as I have stated that, Mr. Hough.

Q.—What is your present opinion? *A.*—That for certain medicines it is a very good way of administering them. For instance, nitroglycerine tablets, if they are properly made, and not stored too long, are very well exhibited in that form.

Q.—Suppose they were prepared for a long storage, would they be good in that form? *A.*—A fairly long storage, Mr. Hough. The nitroglycerin tablets are rather susceptible to a variation that occurs during the manufacture, rather than in their keeping.

Q.—Now then, what medicines— *A.*—Then, of course, medicines that are given hypodermically are very commonly exhibited in tablet form. All drugs that dissolve very easily can very nicely go in tablet form, if not volatile.

Q.—If there are any volatile oils in medicine, it could not be in tablet form very well, could it? *A.*—Volatile oils can be given in that form. Soda mints are often used in that form, and they contain the volatile oil of peppermint.

Q.—Now, what kind of medicines could not well be given in that form? *A.*—Medicines that are not easily soluble, such as for instance, bismuth powder that will not spread over the intestines; things like salol which are not easily soluble, which tend to fuse into a mass of crystals if given in tablet form, and drugs that will volatilize pretty easily. Of course, one could not give the things like phenol (carbolic acid) in that form, because it volatilizes pretty easily.

Q.—Doesn't the fact that these different fluidextracts, tinctures and syrups which have alcohol in them are specified in the pharmacopeia in that form indicate that the pharmacopeial revision committee think that that is the best form? *A.*—Not necessarily, Mr. Hough.

Q.—Not necessarily? *A.*—A great many of these preparations are brought down from olden times, and people are used to prescribing, from the old days, and so they keep on prescribing that tincture, the way it is composed, although something else might answer the purpose just as well. Now, as long as they are prescribed, the pharmacopeial committee takes it for its function to introduce them into the pharmacopeia, as long as they are fairly good preparations; still, it does not mean that they are necessarily the best. In some cases they are the best. It depends upon what is in them.

Q.—What is that? *A.*—In some cases, the alcoholic preparations, of course, are the best.

Q.—Now, heat in making fluidextracts is never beneficial, is it? *A.*—Heat?

Q.—Yes. *A.*—Yes.

Q.—It is beneficial? *A.*—Oh, beneficial? Official I thought you said.

Q.—No, beneficial. *A.*—It would not be beneficial, but that does not mean necessarily it would be detrimental.

Q.—Didn't you read in some of those books on carduus benedictus, that heat was detrimental to it? *A.*—Some claim that heat is detrimental to it; but I don't know that the evidence for it is very good.

Q.—Do you know any evidence against it? *A.*—You refer, I imagine, to the work on cnicin in that connection, do you, Mr. Hough?

Q.—What is that? *A.*—The work on cnicin? that is, the—

Q.—Natavelle? *A.*—There is a very peculiar thing put in this work, which has prevented me from placing any confidence in it.

Q.—Well, but there were other works which referred to that, weren't there? *A.*—All the other works—that was work which was very indefinite—messy mixtures that really don't show very much of anything.

Q.—They have united in saying that heat is deleterious, haven't they? *A.*—It produces, as they claim, certain amounts and degrees of heat, under certain conditions, and the amount of heat, etc.—well, I have not been able to make much out of them.

Q.—Is it your opinion that the cnicin in carduus benedictus is the only active principle in that drug? *A.*—I doubt whether I would call that active.

Q.—You mean in your opinion there are no active principles? *A.*—I should rather—well, of course, the term "active" is always a relative term; but, my opinion—I at least doubt—I might say I think that there are no really active principles there. There is a bitter principle of some sort or the other that has been called cnicin.

Q.—Is there a bitter principle in carduus marianus? *A.*—Very, very little—in the seed, I am speaking of now.

The witness believes that the statement from his book that "it is often desirable to have the patient ignorant of what medicine he is taking," is still true; also

> "On the one hand if he possesses this knowledge, he very frequently has preconceived ideas of the action of the medicine, and will either take it in excessive amounts, or will neglect to take it entirely, or interfere with its action in some other way. On the other hand, it will encourage the habit of self-medication."

Dr. Sollmann was then questioned concerning his illustration about corn. He stated that he believes that it helped to make the subject clear. He was also questioned as to the drugs administered in self-limiting diseases such as pneumonia and whooping cough. He does not know that any one has made a statement that the self-limiting disease should never be treated by medicines.

Q.—Doctor, what is the effect of the trophic nerves of the various organs of the body? *A.*—The trophic nerves? That takes one into a subject of physiology with which in that particular I do not believe I am very familiar. I think there has been some doubt expressed as to whether such things actually exist as trophic nerves and the responses that have been attributed to them, which have been explained by effects on the blood vessels. But I would not presume to a sufficient acquaintance with that subject to make my testimony on it of much value.

REDIRECT EXAMINATION BY MR. T. J. SCOFIELD

On redirect examination, it was shown that the statement concerning colchicum in Dr. Sollmann's book was copied from the pharmacopeia at that time and that there was a mistake in the pharmacopeia, later corrected by an addendum.

Dr. Sollmann had not made any revision of the book after publication which has been published. One revision is now in press.

Q.—Now, Doctor, something has been said to you about your views on the subject of alcohol in this examination, and excerpts have been read to you from your book? *A.*—Yes, sir.

Q.—From this place and that place, by gentlemen in their examination. Now, I will ask you if it is not true that in your textbook you did not say on page 419, on the subject of "Alcohol and its Habitual Use":

> "It may be considered as proved, some authorities to the contrary notwithstanding, that a certain amount of alcohol (variable in individual cases) may be taken daily without any demonstrable permanently injurious effect. But it stands equally certain that it is as dispensable to the organism as nicotine or caffein, and that it must be looked upon purely as a luxury. The injury done by such use of alcohol lies alone in the fact that it is so apt to lead to the use of immoderate amounts."

Did you say that? *A.*—I did.

Q.—And then did you say:

> "With such excessive use, a train of phenomena results, which may be grouped together under the name of chronic alcoholism, and which depend in part upon the irritant action of the alcohol and in part upon specific injury to the neurons."

Did you say that? *A.*—I did, neurons, meaning nerves.

Q.—And further:

> "The first effects are local and depend largely upon the concentration of the spirits. They consist of a catarrh of the whole alimentary canal, progressing from the pharynx downward. They are characterized by the usual symptoms of catarrhal gastro-enteritis; loss of appetite, gastric distress, irregularity of stools, longing for spices, etc. The chronic catarrh leads to malnutrition and emaciation when strong spirits are used. It also appears to constitute a predisposing factor to carcinoma of these organs. In the case of excessive beer drinking, the habitual overdistension of the stomach leads to chronic dilatation."

Did you say that, Doctor? *A.*—Yes, sir.

Q.—And carcinoma means a form of cancer, a malignant disease? *A.*—Yes.

Q.—And then did you say:

> "The continued presence of alcohol in the body sets up a series of irritant and degenerative phenomena in various other organs with which it comes in contact. These changes consist in fatty infiltrations, cellular degenerations and hypertrophy of connective tissues. The neurotic changes in the tissue cells must be attributed to the continued irritation from the constant presence of the alcohol; and to this must be added the interference with circulation due to the changes which alcohol causes in the blood vessels. These two—the direct irritant action of the alcohol on the cells, and the impaired circulation are inseparably connected in the production of the degenerations. Of these, the fatty are the most common, since alcohol, by its combustion, prevents the normal consumption of fat. Connective tissue formation results as the ordinary consequence of necrosis of the —"

The Witness:—Parenchyma. That means essential cell tissue.

Mr. T. J. Scofield:—That is too much for my medical learning. A gentleman whom I used to know sometimes when he could not pronounce a word, used to say "we will pass that by." (Reading continued):

> "These changes are proportional to the concentration of the alcohol. And since this is naturally greatest in the liver, kidneys and blood vessels, these organs show the action first and most prominently. And in the liver again, the periphery of the lobules is mainly affected, on account of the anatomic relation to the portal vein."

You said that, doctor, in regard to alcohol? *A.*—I did.

Q.—Now, then, doctor, I suppose you still hold and maintain those same opinions now, do you not? *A.*—I do, yes.

Q.—When you said in response to Mr. Hough, that 48 drops of alcohol in a tablespoonful dose of solution was not intoxicating, what did you mean by that? *A.*—He asked me in reference to one single dose, and my statement referred to the—

Q.—But suppose it is repeated three or four times a day, and advised to be continuously taken in that way over a long period of time, then what would you think and say about it? *A.*—Well, it might not produce the symptoms of drunkenness that are so often spoken of as intoxication, but it would produce the toxic, chronic effects of alcohol to a greater or less extent, depending upon the susceptibility of the individual.

Q.—Now, doctor, you used the word "toxic." What is meant by the word toxic? *A.*—Poisonous. The word "intoxication" means really poisoning.

Q.—Mr. Hough asked you if, in your book, you have not referred to viburnum prunifolium as being employed more or less as a uterine sedative in menorrhagia and dysmenorrhea, threatened abortion, and so forth. I will ask you if you did not say concerning viburnum prunifolium, and its use for such purposes, on page 510, that "there is no experimental foundation for its use," referring to these things which I have just called your attention to. *A.*—I so stated.

Q.—Is that true today? *A.*—That is more true today even than then.

Q.—It is true today that you have by some experiments that you have conducted found that it is not— *A.*—That it is useless.

Q.—good for those conditions. *A.*—Yes.

Q.—Doctor, you have stated also in answer to Mr. Hough on cross-examination, that since 1840 you have read some 40 papers or articles or some 44 articles or papers written by different people on the subject of carduus benedictus. *A.*—Since 1650, 48 papers.

Q.—Very well, since 1650. And that out of the 44, there were some four of them, as you recall, that seemed to indicate, or contend or state that it has some sort of uterine action. From the experiments which you have conducted, and from your knowledge derived from a study of carduus benedictus in connection with the pharmacological experimentation which you have recently made, with the opinion of these four gentlemen, whoever they were, that carduus benedictus might have some sort of action on the uterine organs of a woman, change the opinion which you have expressed here? *A.*—The four references to that subject that I recall gave no results of individual experiences of the authors. They gave no sign that the authors had ever observed these actions. On the other hand, they give considerable signs of confusion with the drug carduus marianus that had been used for menstrual disturbances to a greater or less extent.

Since then these mentions of the drug contain neither any evidence, nor any reference to any evidence, they would not alter my opinion at all. I would still think the drug is worthless as far as any knowledge of it is concerned. The papers that mention it I would neglect and feel quite justified in neglecting completely.

Mr. T. J. Scofield:—If the Court please, there was one question which I neglected to ask on the direct examination, and I would like the privilege of asking it now.

THE COURT:—Go ahead.

Mr. T. J. Scofield:—It is not in the line of redirect examination.

Mr. Hough:—I don't object.

Mr. T. J. Scofield:—I was asking the Court for that information.

Mr. Hough:—Don't you want to know whether I object or not?

THE COURT:—As a matter of course, counsel consents.

Mr. T. J. Scofield:—All right.

Q.—Doctor, do you know what, if anything, is being done today and has been done during the last number of years by the medical profession by way of preventing disease? *A.*—I know considerable about that in a general way.

Q.—I wish you would tell the jury what you know about it.

Mr. Hough:—I think that is irrelevant and immaterial.

THE COURT:—It strikes me, Mr. Scofield, that you are opening up a subject that will take the better part of the time between now and the adjournment of court for the summer, if it is to be discussed intelligently.

Mr. T. J. Scofield:—Your Honor will remember when the opening statement was made in this case—and I don't wish to speak in the presence of the jury—

THE COURT:—No, no, but this question seems to me to be a very comprehensive question. If Dr. Sollmann tells all he knows about that, we won't get through with this witness this week.

Mr. T. J. Scofield:—I am making my offer based upon what Mr. Walker stated reflecting upon the medical profession.

Mr. Hough:—Mr. Walker never meant to reflect on the medical profession, and I do not think he did.

Mr. T. J. Scofield:—Well, we will read it after a while, and see what he did say.

Mr. Walker:—All right.

Mr. T. J. Scofield:—I said to the court and jury that I would show or we would show in our case that the doctors were using every effort to prevent disease, and thereby curtail the amount of money which they might otherwise make, and it is for the purpose of placing ourselves upon the record now as we should be placed that we make this offer.

Mr. Walker:—Why it is not in the record anywhere, it has not been contested here.

THE COURT:—I recall distinctly, Mr. Walker, your statement to the jury.

Mr. T. J. Scofield:—May I be pardoned for one additional suggestion? The court will remember that when Dr. Webster was upon the witness stand, a question was asked as to the publication of certain articles, the $2,000 proposition, as your Honor will remember, by the American Medical Association through the columns of THE JOURNAL, where it was stated that physicians' incomes were reduced largely by reason of the fact that "patent medicines" existed, and that the American Medical Association, through THE JOURNAL and others, were therefore against "patent medicines" and proprietary medicines.

Mr. Hough:—That has nothing to do with this.

Mr. T. J. Scofield:—It has within this line—

THE COURT:—Mr. Scofield, you have not understood me. I said to Mr. Walker that I remembered distinctly the charge he made in his opening statement, and that I felt something of this sort was proper. But I am still of the opinion that your question is too broad.

Mr. T. J. Scofield:—I do not want to broaden it. I will confine it to the—

THE COURT:—Because, if the witness tells us everything that he has heard about it, that the doctors have been doing in the last ten or fifteen years, we will never get through.

Mr. T. J. Scofield:—I will simply ask him to confine himself to such preventive measures as relate to typhoid fever, diphtheria, tetanus and yellow fever, measures of that kind as to what is being done and then if they want to go into it on cross-examination, they can.

Mr. Hough:—I object to that. The public is doing those things, not the doctors. They are not going down in their pockets, and paying out their money to do this. The public is doing it. We are paying for it. We don't deny that those things are being done.

THE COURT:—You may ask Dr. Sollmann whether some public official discovered the matter of the typhoid prophylactics or some doctor in his laboratory did it, and so with others.

Mr. T. J. Scofield:—I will accept the court's suggestion. I will take the question as the Judge has suggested it.

The Witness:—Will you please repeat that.

(The statement of the court was then read.)

A.—The matter of typhoid prophylactics takes in two quite distinct phases; purification of the drinking water and the disposal of the garbage, sewage, rather, and the employment of typhoid vaccines. The matter of the purification of water supply and sewage has been elaborated by the bacteriologists, which were to a large extent physicians, and has received every encouragement from the health officers.

The people who were most instrumental in getting this pure water proposition put into practice were the health officers who were medical officers and who had the most active support of the medical profession —they had that support, although undoubtedly the cutting down of the frequency of typhoid fever has cut down the demand for physicians enormously.

The matter of typhoid vaccines was principally introduced by medical officers of the United States Army, by the Medical Service and has been widely adopted by physicians whenever it was possible to adopt it.

Mr. Walker:—Do we have an objection to that?

THE COURT:—Oh, yes.

Mr. Walker:—It does not come up in the form of a direct objection, but we object to the whole subject matter.

To which ruling of the Court in permitting said testimony to be given, the plaintiff, etc., excepted.

THE COURT:—Well, I presume that it is admitted by the plaintiff as to all the various preventive measures of disease that are known today, that the doctors even of the American Medical Association make use of them.

Mr. Walker:—Oh, sure.

Mr. Hough:—Certainly.

Mr. Walker:—But that don't affect the materiality of the subject matter as proper matter to be introduced in evidence.

THE COURT:—No.

Mr. T. J. Scofield:—I think, if the court please, that is all we care to inquire.

THE COURT:—I want to ask the witness one question. Going back for a moment to this synthetic proposition. Are there any other drugs, that is, other than viburnum prunifolium, having a valerianic odor, which are reputed to have, or have been reputed to have an action on the human uterus?

The Witness: A.—Nothing on the uterus. The drug that I think of at the moment, as having a valerianic odor, and not being viburnum prunifolium, is valerian itself, and it has, through its odor, probably, a certain use in hysteria.

THE COURT:—Well, has that an action, or has it a reputed action on the human uterus, valerian?

The Witness:—It has no reputed action, and it actually has no action.

THE COURT:—Are you enough of a botanist to tell whether the representation of the plant on the carton of the Wine of Cardui fairly represents the thistle, from which the carduus benedictus is made? *A.*—It does not represent it at all. That is probably an entirely fanciful representation.

Mr. Loesch:—What was that answer?

(Answer read.)

THE COURT:—That is all I want to know.

RECROSS-EXAMINATION BY MR. HOUGH

The witness was further questioned as to the dates of revisions and reprints of his book. He stated that he had not kept track of the dates when reprints were issued; but that the last revision was in 1906, as shown by the date of the copyright, as printed in the book.

Q.—Did you know it was being reprinted in 1912? *A.*—I think so. I don't know whether I did that particular year, but I knew reprints were being made.

Q.—After 1907? *A.*—After 1907.

Q.—And you did nothing to correct this statement in accordance with the correction that had been made in the pharmacopeia? *A.*—No, I did not make any revision at all. It stood in my mind as stated

here by the copyright, that there were no revisions made since 1906, "copyrighted 1906."

Q.—Now, did you mean by what Judge Scofield read to you, on the subject of alcohol in your book, to contradict what I read to you from your book, on the subject of alcohol, or were the two intended to be taken together and construed together? *A.*—You asked me only about one single dose.

Q.—No, no, I am talking about what you said about 20 per cent. of alcohol in foods. *A.*—I said, that as far as the food was concerned, 20 per cent. of alcohol, or the percentage of alcohol, made no difference. I think I said that.

Q.—But I say, as to this statement: you say, "Alcohol should not be taken in strength greater than 20 per cent."

Mr. T. J. Scofield:—That is not reexamination of anything I asked him.

Mr. Hough:—I am entitled to ask him whether the statement—

THE COURT:—Let me ask the witness, did you mean what you said in your book? *A.*—Yes, sir; I meant what I said in my book.

THE COURT:—Then, if your statements are contradictory, it will so appear. He meant what he said.

Mr. Hough: *Q.*—What I read, as well as what Mr. Scofield read? *A.*—Yes.

Q.—Were you discussing under the head "Habitual Use of Alcohol," alcohol as an alcoholic beverage, or alcohol in medicines, on page 419 of your book? *A.*—Any way in which it might be used habitually.

Q.—Either way? *A.*—Either way.

Whereupon the further hearing of said cause was adjourned until 10:30 o'clock the following day, May 11, 1916.

May 11, 1916, Morning

TESTIMONY OF DR. PAUL N. LEECH

The court met pursuant to adjournment. Dr. Paul N. Leech was again called as a witness for the defendants.

DIRECT EXAMINATION BY MR. T. J. SCOFIELD

Mr. T. J. Scofield stated that Dr. Leech was called to connect up a point overlooked when he was on the stand before. Dr. Leech testified that he sent samples of his synthetic preparation to Dr. Loevenhart at Madison, Wis., on December 10. This was the formula of which he spoke in his previous examination.

CROSS-EXAMINATION BY MR. HOUGH

Q.—What date was that, Doctor? *A.*—On or about the 10th of December. I could supply the date accurately probably this afternoon, if you so desire.

Q.—You think it was last December? *A.*—I know it was last December and know it was within five days of the 10th.

Q.—At that time you had learned the chief ingredients of Wine of Cardui from a faithless employee of the Chattanooga Medicine Company, who was then in the employ of the American Medical Association, hadn't you? *A.*—I learned the chemical ingredients of Wine of Cardui solely upon my own knowledge.

Q.—Didn't you learn it from that faithless employee? *A.*—In the first place I do not know to whom you refer, Mr. Hough.

THE COURT:—Better give the name, perhaps he may recognize the name.

Mr. Hough: *Q.*—Do you know Dr. Bicknell? *A.*—I have never met or seen Dr. Bicknell to my knowledge. I have read Dr. Bicknell's article as it appeared in Harper's Weekly, but before it appeared in Harper's Weekly I was making synthetic preparations of Wine of Cardui.

Q.—You are in the employ of the American Medical Association? *A.*—Yes, sir, I am in the employ of the American Medical Association.

Q.—You know that Dr. Bicknell came here and went into their employ, don't you? *A.*—I have not the slightest intimation of such a thing.

Q.—Didn't you see Dr. Bicknell up here in Chicago? *A.*—As I said before, I do not know Dr. Bicknell. I have never seen Dr. Bicknell, nor do I know a thing about it.

Mr. T. J. Scofield:—I want to say this, if the Court please; that Dr. Bicknell is not in the employ of the American Medical Association.

Mr. Hough:—I know he is not now.

Mr. T. J. Scofield:—And never was at any time, or under any circumstances, or for any purpose.

Mr. Hough:—Counsel will perhaps give us the evidence as to what he was doing up here with the Association.

Mr. T. J. Scofield:—When?

THE COURT:—You don't have to put in any evidence. We never heard of Dr. Bicknell before. Let us wait until something is said about it from the witness stand.

Mr. Hough:—I don't want Judge Scofield to testify all by himself.

Mr. T. J. Scofield:—Judge Scofield is speaking truthfully about it, and will testify if it be required or necessary.

TESTIMONY OF DR. L. E. WARREN

Dr. L. E. Warren again was called as a witness for the defendants.

DIRECT EXAMINATION BY MR. T. J. SCOFIELD

Mr. Scofield announced that Dr. Warren was called to connect up some points previously mentioned. Dr. Warren testified that he purchased in the open market a bottle of Wine of Cardui which was sent in the original carton under seal. He made a memorandum by writing his name on the outside carton. A similar package was sent to Dr. Ralph Webster.

CROSS-EXAMINATION BY MR. HOUGH

On cross-examination the witness stated that it was his belief that the bottle sent to Dr. Loevenhart was manufactured since 1906. It was his belief that the bottle sent to Dr. Webster was manufactured subsequent to 1909. He was then handed a carton containing a bottle and stated that as far as he knew the carton was identical to that sent to Drs. Loevenhart and Webster. He marked this carton with his initial. He did not open the cartons sent to Drs. Loevenhart and Webster to look at the bottle. There was then handed to the witness the bottle from the carton which he had identified. He stated that he could not state whether the label on this bottle was identical to that taken from previous bottle. He was asked in detail concerning each statement on the labels. He did not state positively regarding any of the statements whether they were on the labels of the bottle before mentioned. He marked this bottle for identification.

TESTIMONY OF DR. ARTHUR J. CRAMP

Dr. Arthur J. Cramp was again called to testify for the defendants.

DIRECT EXAMINATION BY MR. T. J. SCOFIELD

There was shown to Dr. Cramp a clipping from *Collier's Weekly* for June 8, 1912. He stated that he had endeavored recently to obtain a copy of that issue but was unable to do so. Mr. Scofield wished to offer the clipping in evidence. Objection was made and sustained after argument. There was then shown to the witness the Cardui Fashion Magazine. The witness stated that he believed that it was printed subsequent to 1909, as it contained testimonials dated October and December, 1909. There was then read into evidence an advertisement from page 4 of the Cardui Fashion Magazine.

Dr. Cramp then identified a bottle of Wine of Cardui stamped No. 6, 1915. He stated that the serial number A.171 indicates that it was made or put out subsequent to the change from the corporation to co-partnership on the part of the company. There was then handed to him a bottle of Wine of Cardui which he stated was put out previous to the other bottle because the alcohol percentage was not declared and the serial number was not on. On the first bottle was printed "for menstrual disturbances of women," on the earlier bottle "recommended for menstrual disturbances of women." These bottles were offered in evidence as exhibits. Dr. Cramp then identified a bottle which he purchased in the open market in 1913. He opened the carton, retained the carton in the Propaganda Department, floated off the labels from the bottle, put on his own label stating what was in the bottle, and turned it over to the laboratory for analysis.

CROSS-EXAMINATION BY MR. HOUGH

On cross-examination, the witness again gave the facts concerning the bottles mentioned in the direct examination and stated that when Dr. Warren commenced to analyze the preparation, he was told that it was Wine of Cardui.

STATEMENT BY MR. SCOFIELD

Mr. Scofield asked to strike out from the examination of Dr. J. Clarence Webster a statement containing the quotation "will cure falling of the womb in all its forms" as there was an error in putting on the quotation marks.

Mr. Scofield then introduced as evidence two photographs of billboard exhibits, used by Wine of Cardui Company. Objection was made, overruled and exception taken.

TESTIMONY OF MR. EDMUND ALBERT WHEATLEY

Mr. E. A. Wheatley was called as a witness for the defendants.

DIRECT EXAMINATION BY MR. T. J. SCOFIELD

Mr. Wheatley stated that he is the advertising counsel of the Chattanooga Medicine Company and the advertisements were under his direction. He was asked how many billboards his company has which are 7 by 9 feet in size, similar to those shown to the jury.

Mr. Hough objected to this as irrelevant, calculated to confuse the issue and is not an issue in this case.

THE COURT:—There is one very well defined charge here, and that is, that the business is founded on fraud.

Mr. Hough:—On deceit is the language.

THE COURT:—Well, deceit.

On the question of the admissibility of this witness' evidence as to the extent of the plaintiff's advertising of Wine of Cardui, Mr. Hough argued to the effect that it was not open to the defendants to bring evidence on the point that the business had been built upon deceit, except such as might be introduced under the general charge that the business was a fraud, as based on specific facts stated in the argument. The defendants were entitled to introduce evidence only on those specific statements of fact, contained in the libel, which were set out in the plaintiff's declaration and which had been read into the plea of justification.

THE COURT:—How could you specify generally a combination of events from which possibly a conclusion might be drawn that the business was built upon deceit? Would you have to, in your plea of justification, set out every single link in the chain, and say "from this we draw the conclusion that the business was built on deceit?"

Continuing his argument, Mr. Hough replied to the Court that the difficulty of stating the necessary specific facts was indifferent and this necessity was incumbent on the defendants, who must state the facts, as distinguished from the conclusions that they would draw from them. If they could not state the facts, then they could not justify at all and no evidence would be permissible under the general charge. Mr. Hough having admitted on behalf of the plaintiff, without conceding that it was an issue in the case, that he had advertised Wine of Cardui as extensively as he could, Mr. Wheatley was allowed to leave the stand without testifying.

Mr. T. J. Scofield read from page 7 of the Ladies' Birthday Almanac of 1912, the almanac that is copyrighted and published by the Chattanooga Medicine Company.

Two pictures of the Exhibit of the defendants at San Francisco were introduced as defendants' Exhibit Nos. 78 and 79 and objected to by counsel for the plaintiff on the ground of immateriality. The Court overruled the objection but preserved the exception.

TESTIMONY OF DR. S. W. LEATHERS

Dr. Leathers was called to the stand for the defendants. Before this witness' evidence was taken, the Court intimated that it was disposed at this point to limit further expert evidence on the ground already covered. The defendants' counsel explained that Dr. Leathers was called to testify in reference to the relation existing between pellagra, hookworm and amenorrhea.

Mr. T. J. Scofield:—I think the suggestion made by your Honor is rather unfortunate for us, and particularly when we have been perfectly willing to reduce the number of expert witnesses which the rule allowed us to produce. I grant that this case has taken much time, but it has not been on our account, and if the record is examined here with care, you will see that, and that—

THE COURT:—It may be the Court's fault.

Mr. T. J. Scofield:—The cross-examination in this case has extended—I am not going to say for an unnecessary length.

After some discussion, out of the hearing of the jury, the Court suggested that defendants should stop, on the understanding that the plaintiffs would not put on a greater number of experts than the former had called.

On this the defendants rest their case.

The jury was excused until the next day and adjournment was taken until 2 o'clock p. m., of the same day.

(To be continued)

Correspondence

The Hospital Chemical Laboratory

To the Editor:—In a comparative study of hospital laboratories recently made by the writer, it became apparent that our present system provides but inadequately for the modern requirements of chemical routine and research in such institutions. In course of time the necessity for modern pathologic, bacteriologic and serologic laboratories has become so fully recognized that certain hospital laboratories devoted to these divisions of the medical sciences would do credit to a medical university. But little attention, however, has been as yet given to the development of the hospital chemical laboratory. This is probably due to the fact that the rise of biochemistry is as recent as it has been rapid, the result being that its importance in clinical medicine is only at present attaining full recognition. Thus it is only but a comparatively few years ago that a physician of some experience in general laboratory technic could be expected to carry out adequately the chief chemical examinations required of the hospital laboratory. The number of chemical examinations of clinical importance has steadily increased to the extent that this work now represents a large percentage of the total required of the hospital laboratories. Again, in some instances the analytic procedures have become of such complex nature that physicians with their necessarily generalized scientific training cannot properly be held responsible for accurate results without undue sacrifice of time and energy. Moreover, an increased amount of working space and apparatus is contingent to this augmentation in the chemical work of the modern hospital. These reasons, if briefly stated, may be regarded as sufficient to justify the presence in a large hospital of an adequately equipped chemical laboratory in charge of an experienced biochemist.

There are, however, various other grounds for encouraging the building up of such laboratories. Present day teachers and research workers in biochemistry are often beset by a certain onesidedness in their points of view and attainments. This tendency may incline either medically or chemically, but usually the chemical side predominates. The underlying cause of these difficulties is that it is by no means easy to acquire the ideal blending of chemical and medical experience most desirable for biochemists. The man of pure chemical training has far too few opportunities in the narrow confines of the university department of physiologic chemistry to acquire the needed balance of clinical experience. On the other hand, the physician entering into a biochemical career often lacks the necessary chemical training. If, however, our large urban hospitals possessed biochemical laboratories in charge of men of proper experience, no more ideal training could be afforded future workers in biochemistry than one obtained in such an environment. Here both the young chemist and the physician working in such a laboratory could acquire sufficient mutual experience in these branches to assure of an even future development.

Again, among the large collections of patients in our hospitals, many important and interesting research problems constantly present themselves, often only to remain unsolved for want of an experienced biochemist to undertake them. Many of such questions cannot be hopefully attacked by clinicians for want of sufficient chemical experience. These problems may likewise escape the attention of the university biochemical department. In this lies an additional reason for the existence of hospital biochemical laboratories.

The necessity of such a development having been emphasized, a few remarks as to a suitable organization may be added. The chief difficulty here to be encountered is the great scarcity of men in America sufficiently experienced in both medicine and chemistry to make ideal directors of such laboratories. In hospitals affiliated with universities, however, the director of the chemical laboratory might hold an assistant or associate professorship in the teaching institution. Such an arrangement would permit of medical and biochemical students doing chemical research work in the hospital laboratory, and thus become of distinct advantage

in their training. The minor positions in the laboratory can best be occupied by young chemists. Medical men connected with the hospital should, however, be encouraged to undertake research problems of chemical nature.

There is a frequent tendency to place too great control of the activities of hospital laboratories into the hands of the clinical staffs. In view of the modern development of medicine and its scientific branches, this course cannot but be followed by detrimental results. Perhaps the most judicious relation which can be proposed for the clinicians and biochemist would exist, if to the former were to be confined the seeking for and propounding of research problems, and to the latter the choice and solution of those suitable for chemical study.

With regard to the physical aspects of the hospital chemical laboratory, the following may be suggested: Even if available working space be limited, an effort should be made to give those workers engaged purely in research, room separate from that devoted to routine. The proper equipment of such a laboratory requires considerable judgment and experience, but a discussion of the technical details cannot be here entered into. A very essential adjunct is an experimental ward devoted *solely* to patients undergoing metabolic study. Complete segregation and constant control of such patients is indispensable for work of any value. If extensive studies are to be carried out, a specially trained dietitian is required in addition to nurses experienced in this kind of work. Proper provision for animal experimentation is seldom made in the modern American hospital. The actual requirements in this regard for the chemical laboratory are, however, usually but modest. A single room provided with metabolic cages frequently suffices even for a busy laboratory.

Finally, a working library should be regarded as essential in any completely equipped hospital laboratory in which serious research is attempted. A comparison of American and German hospitals strikingly illustrates the lack of such libraries in most hospitals in this country. This cannot always be ascribed to the usual excuse of shortage of funds, for $1,000 is quite sufficient to acquire a very useful nucleus of books and journals in any one of the medical sciences.

NELSON W. JANNEY, M.D., PH.D., New York.
Physiological Chemist of the Montefiore Home and Hospital for Chronic Invalids.

Efficiency of the Rectal Examination in Obstetrics

To the Editor:—The value of a rectal examination in a normal obstetric case has been emphasized by several writers. The efficiency of the rectal examination is shown by the statistics from the outpatient department of the Presbyterian Hospital and Rush Medical College, where the standing order to students has been, no vaginal examinations after the fifth month. During the last six years there have been over 4,000 deliveries with but two cases of puerperal sepsis, and these two were cases in which vaginal examinations had been made by the same attending man in each case, and episiotomies done with subsequent infection of the episiotomy sutures. When we consider that these deliveries have been made in homes of the Ghetto district under insanitary conditions by students under supervision, the results seem worth while.

The method of making a rectal examination is not complicated. The gloved finger is carefully introduced into the rectum, following a recent enema, and, avoiding the almost constant hemorrhoids, the os is sought. When the edge of the ring is found, the finger is swept around to determine the amount of dilatation. Then the cervix is palpated to determine the amount of effacement and consistency. The sagittal suture and fontanel, or fontanels, can be located, depending on the amount of dilatation of the os. Palpation of the outlet is easily done. A marginal or central placenta praevia is easily palpated. A forelying or prolapsed cord may be found and, in short, almost any condition be ascertained as in a vaginal examination, with the exception of the best pelvic measurement we have—the conjugata vera. The distance of the head is measured in terms of phalanges, so that an intern, an obstetric nurse or a gas anesthetist, reporting a case, may say "1, 2 or 3 phalanges away," as the case may be.

The rectal examination takes less time than to prepare a patient surgically for a vaginal examination, it is less obnoxious to her, and it may be frequently repeated without danger of infection. This is advantageous in cases of contracted pelves, as there arises no contraindication to cesarean section from repeated vaginal examinations. If the patient develops a rise of temperature after delivery, the physician has no reason to reproach himself.

Recently there was a case of thrombophlebitis in a well known obstetrician's patient. It was a source of considerable satisfaction to him that no vaginal examination had been made since the fifth month.

While a rectal examination is aseptic, it is at least debatable whether a vaginal examination may be made aseptic. Nevertheless the remark is frequently made, "I use vaginal examinations entirely, and have no cases of puerperal sepsis. Why should I change to the use of rectal examinations?" The answer to this question is that many cases of low grade salpingitis are ignored by the accoucheur. A temperature of 100 or over on the third or fourth day does not always mean "lactation"; pains in the lower quadrant of the abdomen from the sixth to the fourteenth day do not always mean "constipation," or "muscular rheumatism," or "neuralgia. All of these phenomena often indicate a low grade salpingitis or pelvic peritonitis. This low grade salpingitis or pelvic peritonitis so contracted is just as important a focus of infection as the tonsils, sinuses, teeth and other foci of chronic infection. It seems more reasonable to suppose that the atrium of infection in a parous woman with nonsuppurative salpingitis is chiefly from her obstetric experiences, rather than distant foci in the body.

WILLIAM F. HEWITT, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ARTICLES ON SYSTEMIC BLASTOMYCOSIS

To the Editor:—Please publish a list of references to articles dealing with systemic blastomycosis, more particularly those describing recent work. W. F. STHLER, M.D., Devils Lake, N. D.

ANSWER.—The following is a list of references to articles on the subject:

Morris, R. T.: Case of Systemic Blastomycosis, THE JOURNAL, Dec. 6, 1913, p. 2043.
Stober, A. M., and others: Systemic Blastomycosis, *Arch. Int. Med.*, April 15, 1914; abstr., THE JOURNAL, May 9, 1914, p. 1505.
Hill, H. P., and Dickson, E. C.: Case of Systemic Blastomycosis, *California State Jour. Med.*, March, 1914.
Powers, C. A.: Two Fatal Cases of Systemic Blastomycosis, *Ann. Surg.*, June, 1914.
Hurley, T. D.: Unique Lesion of Heart in Systemic Blastomycosis, *Jour. Med. Research*, January, 1916; abstr., THE JOURNAL, Feb. 19, 1916, p. 603.
Massey, A. Y.: Blastomycosis (?) in Central Africa, *Jour. Trop. Med. and Hyg.*, April 1, 1916.

A MINOR NOTE IN A DIFFERENT KEY

To the Editor:—I thank you very much for your kind letter of sound advice and deserved criticism of my article. I can now see that I did stray away from the point that I should have centered my article about and that it hence was lacking that most essential element, complete coherence. I am sure that all authors, and particularly the young ones such as myself, must appreciate the policy of THE JOURNAL in thus giving counsel and pointing out mistakes. The writer is so liable to be blind to his own errors. A. B. C.

Ignorance of Anatomy.—It is shameful for man to rest in ignorance of the structure of his own body, especially when the knowledge of it mainly conduces to his welfare, and directs his application of his own powers.—Melancthon.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, July 10. Chairman, Dr. W. H. Sanders, Montgomery.

ALASKA: Juneau, July 5. Sec., Dr. H. C. DeVighne, Juneau.

ARIZONA: Phoenix, July 5-6. Sec., Dr. John Wix Thomas, 306 Goodrich Building, Phoenix.

CALIFORNIA: San Francisco, June 27. Sec., Dr. Charles B. Pinkham, R. 527 Forum Bldg., Sacramento.

COLORADO: Denver, July 4. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: Regular, New Haven, July 11-12, Sec., Dr. Chas. A. Tuttle, 196 York St., New Haven; Homeopathic, New Haven, July 11, Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven; Eclectic, New Haven, July 11, Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

DELAWARE: Dover and Wilmington, June 20-22. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

DISTRICT OF COLUMBIA: Washington, July 11-13. Sec., Dr. Edgar P. Copeland, The Rockingham.

ILLINOIS: Chicago, June 21-23. Sec., Dr. C. St. Clair Drake, Springfield.

INDIANA: Indianapolis, July 11-13. Sec., Dr. W. T. Gott, 84 State House, Indianapolis.

MAINE: Augusta, July 6-7. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MASSACHUSETTS: Boston, July 11-13. Sec., Dr. Walter P. Bowers, 1 Beacon St., Boston.

MICHIGAN: Ann Arbor, June 19-21. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MISSISSIPPI: Jackson, June 20-21. Sec., Dr. J. D. Gilleylen, Jackson.

NEW HAMPSHIRE: Concord, June 26-27. Sec., Dr. W. T. Crosby, The Beacon, Manchester.

NEW JERSEY: Trenton, June 20-21. Sec., Dr. Alexander MacAlister, 429 E. State St., Trenton.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 27-30. Chief, Examinations Division, Mr. Harlan H. Horner, State Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 27-30. Sec., Dr. H. A. Royster, Raleigh.

NORTH DAKOTA: Grand Forks, July 4. Sec., Dr. G. M. Williamson, Grand Forks.

OKLAHOMA: Oklahoma City, July 11. Sec., Dr. R. V. Smith, 502 Daniel Bldg., Tulsa.

OREGON: Portland, July 5-7. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 11-13. Sec., Mr. Nathan C. Schaeffer, Department of Public Instruction, Harrisburg.

RHODE ISLAND: Providence, July 6-7. Sec., Dr. Gardner T. Swarts, Room 313 State House, Providence.

SOUTH DAKOTA: Deadwood, July 11. Sec., Dr. Park B. Jenkins, Wauhay.

TEXAS: San Antonio, June 27-29. Sec., Dr. John S. McCelvey, Temple State Bank Bldg., Temple.

UTAH: Salt Lake City, July 3. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

VERMONT: Burlington, July 11-13. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 20-23. Sec., Dr. J. N. Barney, Fredericksburg.

WASHINGTON: Tacoma, July 4. Sec., Dr. C. N. Suttner, Walla Walla.

WEST VIRGINIA: Charleston, July 11. Dr. S. L. Jepson, Charleston.

WISCONSIN: Milwaukee, June 27-29. Sec., Dr. J. M. Dodd, 220 E. 2d St., Ashland.

ARTICLES OF AMALGAMATION

Between the University of Pennsylvania and the Medico-Chirurgical College and Hospital

The Medico-Chirurgical College and Hospital shall become the Medico-Chirurgical College and Hospital, Graduate School of Medicine of the University of Pennsylvania.

The following clinical professors of the medical department of the Medico-Chirurgical College—eight in number—shall automatically become members of the faculty of the Medico-Chirurgical College, Graduate School of Medicine, with the rank of full professors: James M. Anders, Ernest Laplace, W. Easterly Ashton, L. Webster Fox, George M. Boyd, Judson Daland, E. B. Gleason, George E. Pfahler.

The following scientific professors of the medical department of the Medico-Chirurgical College—five in number—shall at once be elected professors in the undergraduate school of medicine in the University of Pennsylvania with the same rank, title and salary as they now have: Seneca Egbert, John C. Heisler, Joseph McFarland, George H. Meeker, Horatio C. Wood, Jr.

Under the charter and statutes the ultimate control of all teaching in the University is vested in the Board of Trustees—subject to such control, and subject to the terms of donations, endowments made or to be made, the teaching of medicine and surgery to graduate students shall be under the direction of the Faculty of the Medico-Chirurgical College and Hospital, Graduate School of the University of Pennsylvania.

No future amalgamation between the university and any institution now existing shall operate to create within the university a similar but independent school for graduate teaching in medicine and surgery.

In any such case the graduate teaching in such school shall be done by this faculty as now composed or as from time to time constituted by action of the board of trustees.

The age limit prevailing in the University of Pennsylvania shall not be operative in the case of the professors who come in from the Medico-Chirurgical College until at least five (5) years from the time the new graduate school is built and opened for instruction.

The trustees of the university shall provide a new hospital containing 200 beds for ward patients and not less than 50 private rooms and a nurses' home. The hospital shall include on the staff or faculty a professor of biologic chemistry and a professor of physiology, pathology, and bacteriology and shall provide for them well-equipped and thoroughly organized laboratories. There shall also be a Roentgen-ray and electrotherapeutic laboratory and a department of physical therapeutics.

That there may be no interference with the hospital facilities now enjoyed by the clinical professors of the Medico-Chirurgical College, the new hospital shall be completed and organized before the present hospital is vacated, unless the city should in the meantime take possession of the property.

Subject to the agreement of merger with the Evans Dental Institute the dental school of the Medico-Chirurgical College shall merge completely in the dental school of the University of Pennsylvania, its faculty becoming a part of the dental faculty of the University of Pennsylvania, and the student body uniting with the student body of the university.

The following dental professors of the Medico-Chirurgical College shall be elected professors in the dental school of the university with the same rank, title and salary as they now have: I. Norman Broomell, R. Walter Starr, L. Ashley Faught.

The School of Pharmacy of the Medico-Chirurgical College may become a distinct branch of the University of Pennsylvania to be known as the department of pharmacy, and J. W. Sturmer shall be elected a professor in the department with the same title and salary as he now has.

The University of Pennsylvania shall carry out all contracts and obligations entered into with students who are registered in the Medico-Chirurgical College at the time the merger is accomplished. The trustees shall recognize new students who have registered and admit them to the university without further examinations. Students who have passed their examinations and who present certificates from their respective deans shall be admitted to advanced standing in the university without formality and given a diploma in course.

The graduates of the Medico-Chirurgical College shall be eligible to membership in the corresponding alumni societies and also in the general alumni society.

All assets, property and endowments held by the trustees of the Medico-Chirurgical College and Hospital corporations shall pass in absolute ownership to the corporation of the University of Pennsylvania, to be held as a separate fund and used exclusively for buildings, development and maintenance of the Medico-Chirurgical College and Hospital, Graduate School of Medicine of the University of Pennsylvania.

Representation of the Board of Trustees of the University of Pennsylvania shall be given to the Medico-Chirugical College if possible.

Teaching in the Medico-Chirurgical College shall end with the present session of 1915-16 and the university trustees shall take immediate steps to transfer the professors and students of the Medico-Chirurgical College in accordance with the articles of amalgamation.

The Alumnae of the Nurses' Training School of the Medico-Chirurgical Hospital shall become members of the reorganized alumnae association of nurses of the Medico-Chirurgical College and Hospital, Graduate School of Medicine of the University of Pennsylvania.

JAMES M. ANDERS,
Chairman Amalgamation Committee.
W. EASTERLY ASHTON,
Secretary.

Alaska January Report

Dr. Henry C. DeVighne, secretary of the Alaska Board of Medical Examiners, reports the oral and written examination held at Juneau, Jan. 4, 1916. The total number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 2, both of whom passed. The following colleges were represented:

	PASSED	
College	Year Grad.	Per Cent.
Columbia University, Coll. of Phys. and Surgs.	(1907)	80
University of Edinburgh	(1872)*	75

* Graduation not verified.

California Reciprocity Report

Dr. Charles B. Pinkham, secretary of the California Board of Medical Examiners, reports that 43 candidates were licensed through reciprocity from December, 1915, to Jan. 1, 1916. The following colleges were represented:

College	Year Grad.	Reciprocity with
Denver College of Physicians and Surgeons	(1909)	Colorado
University of Colorado	(1911)	Colorado
Yale University	(1903)	Connecticut
Atlanta College of Physicians and Surgeons	(1913)	Georgia
American Medical Missionary College	(1901)	Illinois
Bennett College of Eclectic Medicine and Surgery	(1902)	Illinois
Hahnemann Medical College and Hospital, Chicago	(1891)	Florida
	(1903)	Illinois
Northwestern University	(1907) Missouri; (1906) (1911, 2)	Illinois
Rush Medical College	(1908) (1912)	Illinois
Indiana University	(1908)	Ohio
Keokuk Med. Coll., Coll. of Phys. and Surgs.	(1902)	Iowa
Kentucky University	(1904)	Washington
University of Louisville	(1910)	Idaho
Johns Hopkins University	(1906) Iowa; (1910) (1912, 2)	Maryland
University of Maryland	(1894)	Washington
Tufts College Medical School	(1906)	Arizona
University of Michigan Medical School	(1911)	New York
	(1912)	Michigan
Minneapolis College of Physicians and Surgeons	(1908)	S. Dakota
Kansas City Medical College	(1894)	Nevada
Marion Sims College of Medicine	(1895)	Illinois
Marion-Sims-Beaumont Medical College	(1902)	Missouri
University Medical College, Kansas City	(1898)	Ohio
Washington University	(1913)	Missouri
Omaha Medical College	(1896)	Nebraska
Columbia University, College of Phys. and Surgs.	(1905)	New York
Cornell University	(1908)	New York
Long Island College Hospital	(1885)	Nevada
New York Med. Coll. and Hosp. for Women	(1902)	New York
Western Reserve University	(1906)	Ohio
Jefferson Medical College	(1899) Michigan; (1906)	Penna.
University of Pennsylvania	(1902)	Illinois
Tennessee Medical College	(1906)	Washington

Rhode Island January Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the practical and written examination held at Providence, Jan. 6-7, 1916. The total number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 80. The total number of candidates examined was 5, all of whom passed. The following colleges were represented:

	PASSED	
College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Baltimore	(1915)	82.4
Harvard University	(1915)	80
Tufts College Medical School	(1909)	81.2
Jefferson Medical College	(1914)	81.5
Medico-Chirurgical College of Philadelphia	(1915)	80

One candidate, a graduate of the Medico-Chirurgical College of Philadelphia in 1901, failed at the oral examination held Jan. 13, 1916.

Oklahoma January Report

Dr. Ralph V. Smith, secretary of the Oklahoma State Board of Medical Examiners, reports the oral and written examination held at Oklahoma City, Jan. 11-12, 1916. The total number of subjects examined in was 11; total number of questions asked, 100; percentage required to pass, 70. The total number of candidates examined was 4, of whom 2 passed and 2 failed. Twelve candidates were licensed through reciprocity. Four candidates were licensed through reregistration. The following colleges were represented:

	PASSED	
College	Year Grad.	Per Cent.
Tulane University of Louisiana	(1914)	91
University of Tennessee	(1915)	83
	FAILED	
Birmingham Medical College	(1915)	79 *
University Medical College, Kansas City	(1897)	69

	LICENSED THROUGH RECIPROCITY	
College	Year Grad.	Reciprocity with
Arkansas Industrial University	(1889)	New Mexico
Arkansas University	(1914)	Arkansas
College of Phys. and Surgs., Little Rock	(1911)	Arkansas
Rush Medical College	(1890)	Wisconsin
University of Louisville	(1896) Missouri; (1913)	Kentucky
Eclectic Medical University, Kansas City	(1911)	Arkansas
Lincoln Memorial University	(1914)	Tennessee
Meharry Medical College	(1912)	Texas
Memphis Hospital Medical College	(1913)	Tennessee
Marquette University	(1913, 2)	Wisconsin

* Fell below the required average in one or more subjects.

Book Notices

HARVEY'S VIEWS ON THE USE OF THE CIRCULATION OF THE BLOOD. By John G. Curtis, M.D., LL.D. Based on a Lecture Delivered in 1907, before the Johns Hopkins Hospital Historical Club at Baltimore. Cloth. Price, $1.50. Pp. 194, with illustrations. New York: Columbia University Press, 1915.

This interesting book was published after the death of the author, and the final touches necessary for publication have been supplied by Prof. F. S. Lee. The book represents a large amount of scholarly work, and as pointed out by Lee, is a more profound study of Harvey's ideas, as compared with the ideas of his most important predecessors, than has heretofore appeared. Lee says: "It is the work of one who from the background of the physiological science of today delighted in mastering the ideas of the fathers of modern physiology. If his work is to be summarized in a single sentence, it may be said that he has shown Harvey to be a disciple more of Aristotle than of Galen. Although Harvey had the courage and the originality to break away from him whose ideas had prevailed for fourteen centuries, and to find the truth in regard to the movement of the blood, he found much to approve in the master who had lived five hundred years before Galen. Harvey's true position in the world of physiological thought has not before been known. Herein lies Professor Curtis' contribution to the history of his science."

THE MORTALITY FROM CANCER THROUGHOUT THE WORLD. By Frederick L. Hoffman, LL.D., F.S.S., F.A.S.A., Statistician, The Prudential Insurance Company of America. Cloth. Gratis. Pp. 826. Newark, N. J.: The Prudential Press, 1915.

So far as we know to the contrary this book represents the most complete study of the incidence of cancer yet published. The literature on cancer statistics has been thoroughly reviewed, and figures are supplied on cancer in every aspect. There are 220 pages of the book devoted to a discussion of the results. The remainder, about 600 pages, contains charts and appendixes quoting actual statistics of cancer as it occurs in practically every part of the world where such studies have been made. Special appendixes are devoted to the recommendations and instructions of various societies for the control of cancer, and about twenty pages to a bibliography. The book is exceptionally worth while, and the Prudential Life Insurance Company is to be congratulated on the spirit that prompted the financial outlay involved in its production.

PRACTICAL PHYSIOLOGICAL CHEMISTRY. A Book Designed for Use in Courses in Practical Physiological Chemistry in Schools of Medicine and of Science. By Philip B. Hawk, M.S., Ph.D., Professor of Physiological Chemistry in the Jefferson Medical College of Philadelphia. Fifth Edition. Cloth. Price, $2.50 net. Pp. 638, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1916.

The fifth edition of this book contains several new chapters on nucleic acids and nucleoproteins, on gastric analysis, on intestinal digestion, on blood analysis and on metabolism. It offers a short, concise treatment of physiologic chemistry, and is well adapted for use in schools. One of its best features is that it serves as a laboratory manual; the numerous experiments which it describes are well chosen.

Medicolegal

Diagnosis and Treatment of Fractures as Sprain

(Nickerson vs. Gerrish (Me.), 96 Atl. R. 235)

The Supreme Judicial Court of Maine overrules a motion for a new trial, after a verdict for $5,000 damages was returned in favor of the plaintiff, on condition that he remit all of the verdict in excess of $3,000. The court says that the plaintiff, in walking in a railroad roundhouse, January 5, stepped unawares into an ash pit about 3 or 4 feet deep, striking his full weight on his right foot flat on the brick bottom of the pit, and thereby fractured both bones of his right leg, the fibula and tibia, about 3 inches above their lower ends. About eight hours afterward, he was attended by the defendant, who diagnosed his injuries as a sprain and administered treatment accordingly. Subsequently the defendant visited him six times, the last visit being January 14 or 15. At that time the plaintiff was on crutches and suffering considerable pain; but, at his suggestion that he wished to get back to his office, the defendant advised that he might do so. The defendant did not see the leg again until February 4, when the plaintiff called at his office, and it was "obvious to the eye" that there had been a fracture as the result of the accident. The defendant did not, however, inform the plaintiff of that fact, or then propose any treatment to reduce the fracture, but advised him to have the leg massaged and report in three days. On the evening of the same day, the plaintiff consulted another physician, and a roentgenogram of the leg was taken. The next day the defendant was paid for his services and discharged from the case. There was considerable testimony of physicians, on the one side and the other, as to the difficulty of diagnosing injuries to the lower leg or ankle, and as to the methods of examination for such injuries, and the relative utility of the different recognized tests which are used to detect fractures in the lower leg or ankle. But, while that testimony was not altogether in harmony, it disclosed a consensus of opinion that there are certain recognized methods of examination or tests to be used when the nature of such injuries is not obvious, but hidden and difficult of diagnosis. That the defendant was perfectly familiar with all the methods and tests recognized by the profession to be used in such examinations, and understood their relative usefulness, was conceded. He concluded that it was unnecessary in the plaintiff's case to have a roentgenogram taken of the leg, or to etherize the patient, and he relied on his manipulation of the injured parts and his examination for deformity or other possible indication of fracture, as affording him sufficient information on which to base his diagnosis. He made a mistake, howover, and his diagnosis was wrong. But that fact alone was not sufficient to render him liable. Something else must be shown. And the issue before the jury in this case necessarily was whether that mistake was the result of a failure of the defendant to use painstaking care and diligence, and to exercise the best of his admitted learning, skill and judgment in his examination and treatment of the plaintiff's injuries. That issue the jury found in the plaintiff's favor. A physician impliedly agrees with his patient that he possesses that reasonable degree of learning and skill in his profession which is ordinarily possessed by other physicians under like conditions, that he will use his best skill and judgment in diagnosing his patient's disease or ailment and in determining the best mode of treatment, and that he will exercise reasonable care and diligence in the treatment of the case.

Perforating Lining of Bladder — Abandoning Case

(Burnett vs. Layman (Tenn.), 181 S. W. R. 157)

The Supreme Court of Tennessee reverses a judgment entered on a directed verdict for the defendant, and remands the case for a new trial. The action was for alleged malpractice. The court says that the plaintiff was being treated for a bladder trouble, and it was thought necessary by the defendant to sound the urethra. In the performance of this operation there was some evidence tending to show that the lining of the bladder was "pocketed" or perforated by the sound. A physician does not guarantee the cure of his patients. Presuming a careful diagnosis, a physician is not liable for damages resulting from an honest mistake in determining on the character of treatment to be administered, or in determining on the necessity of an operation. These things are mere matters of judgment on which an action for damages cannot ordinarily be predicated. While it is sometimes difficult to distinguish between negligence and an error of judgment, it may be said, generally speaking, that in performing an operation the physician is employing surgery as an art, and he is liable for negligence in operating. So in this case, while the defendant could not be held liable for an error of judgment in determining on the sounding operation, he was liable for any negligence in the actual performance thereof. Some of the evidence introduced for the plaintiff indicated that the defendant did not exercise the care which an ordinarily prudent physician should have employed in his manner of using the sound. In fact, in the absence of any explanation whatever from the defendant, it might have been inferred by the jury that the lining of the bladder would not have been perforated if due care had been used.

Another count of the declaration sought to hold the defendant liable on account of his abandoning the case, and the court thinks there was evidence to sustain this count. It appeared that when this sound was introduced, the plaintiff heard something pop, and the withdrawal of the sound was followed by a flow of blood and pus. The defendant appeared excited, announced that he was no surgeon, and told the plaintiff that he must procure a surgeon. The defendant then hurriedly left, without any effort to relieve the plaintiff or to administer to him further. The plaintiff did not procure another physician until the next day or day thereafter. It is well settled that a physician who undertakes the treatment of a case may not abandon his patient until in his judgment the facts justify the cessation of attention, unless he give to the patient due notice that he intends to quit the case and affords the patient opportunity to procure other medical attendance. What is fair notice to a patient depends on the circumstances of each case. In this case the plaintiff appeared to have been suffering greatly, bleeding, and in need of immediate attention when the defendant abandoned him. Certainly the defendant should have done something in this pressing case to have relieved the distress of his patient. The court thinks the defendant was liable for his conduct. He should have remained with the plaintiff until immediate sufferings were relieved, or until another physician had been secured.

Contract with Health Officer to Treat Cases Against Public Policy

(Town of New Carlisle vs. Tullar (Ind.), 110 N. E. R. 1001)

The Appellate Court of Indiana, Division No. 1, reverses a judgment for $362.22 obtained by plaintiff Tullar against the town for professional services rendered and medicines furnished in treating certain smallpox cases. The plaintiff contended that he was first employed as a physician to treat the cases, and was later in the same day appointed to and accepted the position of health officer of the town, the salary of which was $15 a year. The court holds that the principle of public policy was involved, and that therefore the alleged contract under which the services were rendered was void if entered into after the plaintiff accepted the position of health officer, and, if entered into before he became such health officer and the services were rendered while he was such officer, the contract was thereby rendered invalid, and its enforcement would be against public policy. Whether the contract was entered into shortly before, at the time, or after the plaintiff's appointment as secretary of the board of health, was not material, for it was not disputed that he rendered the services while acting in his official capacity as health officer. However, the alleged contract did not come within the letter of the Indiana statute which prohibits officers from being interested in public contracts. But whenever a public officer enters into a contract, the execution of which may make it possible for his

personal interests to become antagonistic to his faithful discharge of public duty, such contract is held void on the ground that it is against public policy. The secretary of a board of health in his official capacity owes high and important duties to the public. His responsibiliy not only involves the health and sanitary conditions of the citizens generally, but in determining when it is necessary to act and the nature and extent of the measures to be employed he necessarily determines questions which reach and affect the public treasury. When measures have been taken and treatment given at the expense of the public, he is charged with general supervision and must likewise determine when such measures or treatment may safely be discontinued. The services for which a recovery was allowed in this case continued throughout the month of March. The plaintiff's duties as health officer were continuous throughout that time. The determination of the necessity for the continuation of the services at the expense of the municipality during that time was a question that devolved on him in his official capacity. Whether he acted honestly and in good faith was not material to the question under consideration. The question depended, not on what was actually done under the contract, but on what was made possible thereby. Recovery for such continued services could not be sustained on the ground of emergency. Cases dealing with emergency have been duly considered, but are not of controlling weight here, though they have application to many situations which arise in relation to public health.

Insufficient Evidence of Wife Promising to Pay Physician

(Vernaglia vs. Cirota (N. Y.), 156 N. Y. Supp. 432)

The Supreme Court of New York, Appellate Term, First Department, reverses a judgment obtained by the plaintiff, and grants the defendant a new trial, with $30 costs to the defendant to abide the event. The court says that the plaintiff, a physician, sued the defendant to recover the alleged reasonable value of professional services rendered to her husband at the joint request of the defendant and her husband, who had since died. It is well settled that the performance of services by a physician for a third person at the request of another gives rise to no implied promise to pay for the services by the person making the request, unless the relationship of such person to the plaintiff be one which imports a legal obligation to provide them. In order to support such a liability of a person under no legal obligation to provide the services of a physician, there must be an express promise on the part of such person to pay for the services, made before the services are rendered. The plaintiff recognized this rule, and that a wife is under no legal obligation to provide such services for her husband out of her own estate; but he relied on an alleged express promise of the defendant to pay for the services. The evidence of such express promise by the defendant was the testimony of the plaintiff that at the time he commenced the services he had a joint conversation with the defendant and her husband, the patient, in which they said: "Doctor, you are the one we have confidence in, and we want you to visit me, or the sick one, three times daily, and we will pay you for everything you do for us." He was asked to state exactly what each party said, and replied: "They all talked. They were both talking together. I cannot separate them." The defendant denied that she made any statement in regard to payment for the plaintiff's services, and testified that there were several other physicians in the room, who were all talking in consultation, and she had nothing to say to any one. Resolving this issue of fact most favorably to the plaintiff, the court is of the opinion that the testimony did not show an express promise by the defendant to be individually responsible for the debt. Assuming that the wife said, jointly with her husband, "We will pay you for everything you do for us," the court thinks that under the circumstances here disclosed the "we" clearly referred to the family, and to the husband as the responsible head of the family. In the absence of a separate statement by the wife, saying "I will pay you," or words to that effect, no express promise on the part of the wife to be personally liable for the physician's fees could be found.

Society Proceedings

COMING MEETINGS

Montana State Medical Association, Miles City, July 12-13.
New Jersey Medical Society, Spring Lake, June 20-22.
Washington State Medical Association, Seattle, July 12-14.

ASSOCIATION OF AMERICAN PHYSICIANS

Thirty-Fourth Annual Meeting, held at Washington, D. C., May 9-11, 1916

(Concluded from page 1886)

Treatment of Typhoid by Intravenous Injections of Sensitized Typhoid Vaccine Sediment

DRS. FREDERICK P. GAY and H. T. CHICKERING, Berkeley, Calif.: The majority of about seventy-five cases of typhoid were treated with intravenous injections of polyvalent, sensitized vaccine sediment. The mortality was about the same as the best hospital normal, from 9 to 10 per cent. Distinct benefit was seen in cutting short the disease. Over 40 per cent. of the cases were abortively cured, with normal temperature within a week after the first injection. In 25 per cent. more an early induced lysis was observed.

DISCUSSION

DR. LOUIS M. WARFIELD, Milwaukee, Wis.: Sixteen of the twenty-one patients treated with this vaccine recovered; two patients were cut short abortively, a man of 40 and a child; the man suffered a typical relapse which was uninfluenced by the vaccine. The five deaths were due, two to pneumonia, two to hemorrhage and one to long continued toxemia. The average duration of fever in this series was thirty-eight days, the same as in the prior series of unvaccinated cases. The shortest vaccinated case was seventeen days, the shortest unvaccinated case, sixteen days. The highest leukocytic crisis took the count to 42,000, and occurred five hours after vaccination. Two impressions were gained: 1. The general course of typhoid is milder after vaccination. 2. The subjective symptoms are ameliorated.

DR. JOSEPH L. MILLER, Chicago: Nonspecificity of the reaction needs emphasis. Lüdke obtained as good results from the use of albumose as from vaccine. I have seen as good results from the use of proteose. Recently I saw remarkably quick recoveries from acute infections following the use of chicken serum. In acute arthritis I have been able to induce very striking crises with injections of typhoid vaccine.

Physical Signs and Symptoms of Wounds of the Chest

DR. C. P. HOWARD, Iowa City, Iowa: This series comprised 107 cases, of which eighty-seven were thoroughly studied. The wounds were produced by rifle or machine gun bullets (forty-five) or by shell, as shrapnel, high explosive, or hand grenade (forty-two). In Group 1 (fifteen) no signs could be found; in Group 2, either pneumonia (four) or simple serous effusion (two); in Group 3, mediastinitis, one case. In Group 4 a hemothorax was found, which was either infected (nine cases) or noninfected (fifty-six cases). Infecting organisms varied. Symptoms were cough, pain, hemoptysis of varying degree, and dyspnea. There was usually fever. The physical signs suggested consolidation rather than fluid, owing to the great compression of lung. Cardiac displacement was often striking. In eight cases there were unequivocal and in five others suggestive signs of pneumothorax. In four cases pneumonia existed on the side opposite the hemothorax. Secondary hemorrhage into the pleural cavity was rare (one case). Simple fibrinous pericarditis occurred in three cases, and a pneumopericardium in one. Treatment consisted of free drainage in infected cases and of simple aspiration or of oxygen replacement. Mortality was only 7 per cent. in the entire series.

DISCUSSION

DR. DAVID RIESMAN, Philadelphia: I have observed the same physical signs described by Dr. Howard as occurring in hemothorax due to gunshot wounds in traumatic hemo-

thorax without penetration. They were left alone and got well by absorption.

Anaphylatoxins

DRS. F. G. NOVY and P. H. DEKRUIF, Ann Arbor, Mich.: An anaphylatoxin is a toxic substance developed in an organism as a result of the introduction into that organism of any one of various things. It is now possible to make in five minutes a constant anaphylactic poison which will kill a 250 gm. guinea-pig immediately in a dose of 0.25 c.c. If agar serum anaphylatoxin is centrifugalized, it may be used without harm; after fifteen minutes it kills; and this may be repeated: it is a true colloidal periodicity. Normal serums are all deadly poisons if treated right. Normal blood serum, which is harmless when freshly drawn into a syringe and for one or two minutes thereafter, after three minutes always kills. Rabbit's blood was divided into two portions; one part defibrinated by beads was harmless; another part defibrinated with a rod always killed. If serum can be so influenced out of the body, why not in it? The answer was found in the production of a constant poison by the use of agar as antigen, but only when it was employed in a certain way.

Various Proteose Intoxications

DR. G. H. WHIPPLE, San Francisco: The relation of proteose intoxication to general peritonitis, acute pancreatitis and acute intestinal obstruction was made the subject of study. The material used experimentally was obtained in cases of acute peritonitis and of acute pancreatitis: the proteose was one precipitated by five volumes of alcohol. Constant presence of this proteose in the organs concerned was noted in the processes studied; it was recovered from closed intestinal loops, from exudates in sterile peritonitis, and from the extracted pancreas in induced pancreatitis. It was absent in controls. A rise in noncoagulable nitrogen has been noted in the three conditions studied; induced peritonitis, pancreatitis and obstruction in dogs was followed by rapid rise of noncoagulable nitrogen. It is assumed that this is due to destruction of body tissue by a toxic agent, namely, proteose. It is concluded that the evidence leads to the idea that, in the three conditions mentioned, proteose intoxication plays a part.

The Food Problem in Dispensary Patients of Different Nationalities

DRS. H. R. M. LANDIS and F. A. CRAIG, Philadelphia: The proper utilization of food has an important bearing on the prevention of disease, notably tuberculosis. Are the people getting the right kind and amount of food for their money? Are foreign born dispensary patients adapting themselves well to American market conditions? A study was made of four groups of families: three Italian, three Jewish, three Negro and three Polish. Daily inventories of their food supply were made for three weeks by a nurse; calories, waste and cost were estimated. Adopting a standard calory value, including 340 calories represented by protein, it was found that all the groups approximated the desired calory value in the food purchased, but there was much variation in the protein content. The cost per head per day was as follows: Italian, 19 cents; Jews, 21.5 cents; Negroes, 24 cents; Poles, 34 cents.

DISCUSSION

DR. S. SOLIS COHEN, Philadelphia: The caloric content is by no means representative of the true value of food, especially of its dietetic value for tuberculosis. The therapeutic value of food in tuberculosis depends on its richness in nitrogen rather than the other ingredients.

Etiology of Pellagra

DR. E. J. WOOD, Wilmington, N. C.: Corn is regarded as bearing the same relation to pellagra as is borne by rice to beriberi. The correctness of this view is proved both by experiments on the pigeon and by evidence found in the literature of outbreaks of pellagra brought about by eating highly milled meal, which were promptly corrected by feeding whole meal. The fault lies in two factors: The first is the heating of the corn in kilns above 120 C., which is enough to destroy the vitamin. The second is the removal of the fat-containing germ from the grain. The remedy consists in feeding the victims the whole grain, and this plan is also prophylactic.

DISCUSSION

DR. JOSEPH SAILER, Philadelphia: I recently saw two cases in Philadelphia; both patients had lived in the city for thirty years; neither had ever used corn meal as food.

DR. NATHAN E. BRILL, New York: I recently observed pellagra in a man who had not been outside New York City in twelve years and had never tasted corn meal in his life.

DR. E. J. WOOD, Wilmington, N. C.: I have seen many pellagrins who have never eaten corn meal in their lives, but who nevertheless were relieved on being fed corn chops. Wheat germ will probably act in the same way. The very extensive use of baking powder and soda in the South may be a factor in the pellagra problem; these ingredients in bread may liberate enough sodium carbonate to destroy the vitamins in the best of grain. It is a fact that the sudden appearance of pellagra in the South was coincident with the disappearance of the old fashioned water-power grist mill.

Lipase in the Urine of the Tuberculous

DR. WILLIAM CHARLES WHITE, Pittsburgh: The study was undertaken while seeking a key to the disappearance of fat in the tuberculous. Little if any lipase is found in the urine of normal human beings; little, if any, in urine from afebrile tuberculous persons, progressing well; but there is a marked rise of lipase in urine from febrile tuberculous persons approaching death. Lipase rises in the urine before and during fever in the tuberculous, and declines with defervescence.

Leukemia, Lymphosarcoma and Hodgkin's Disease

DR. C. H. BUNTING, Madison, Wis., and DR. J. L. YATES, Milwaukee, Wis.: Leukemia, lymphosarcoma and Hodgkin's disease have in common: (1) a primary focus of infection; (2) progressive glandular enlargement; (3) a chronic course with late anemia and late fever; (4) eventual fatal termination; (5) early Hodgkin's blood picture or leukemia blood picture, and (6) all yield a diphtheroid organism. The leukemic blood picture may appear in all the groups. Shall we adhere to the classification of these diseases in three separate compartments, or shall they be regarded as variations of one process associated with the diphtheroid organism?

DISCUSSION

DR. H. G. WELLS, Chicago: In studying mice in the course of tumor work, a lymphatic condition, indistinguishable from leukemia in man, has been repeatedly observed. Nothing like lymphogranulomatosis or Hodgkin's disease has been found. Mice which develop leukemia do not have tumors.

DR. THEODORE C. JANEWAY, Baltimore: Our understanding of these conditions is not advanced by claiming that a diphtheroid organism is always present, or by explaining contradictory findings on the basis of technical errors. We have studied all sorts of lymph nodes without the finding of the diphtheroid organism with any degree of constancy.

DR. FRANK BILLINGS, Chicago: In forty-odd cases of Hodgkins's disease and other lymphatic diseases the diphtheroid organism was recovered from the lymph nodes in all except two. But the same organism has been found in goiters, in joints, in tuberculous glands, etc., so that I am inclined to the belief that it is a parasitic organism accidentally present in pathologic tissue. Animal experiments with the organism have not indicated any specificity, and I do not believe it has any etiologic relation to the lymphatic diseases.

Renal Function in Serum Disease

DRS. W. T. LONGCOPE and F. A. RACKEMAN, New York: With a constant salt-containing food, the sodium chlorid, water and phenolsulphonephthalein output were measured. Just as water and sodium chlorid output are diminished in pneumonia, so in eight of ten cases of serum disease there was a similar diminution, with salt retention in the tissues. The salt and water were liberated during convalescence. In another type (without edema) there was no salt retention,

and the administration of salt caused diuresis. Thus serum disease may act in two ways.

Occurrence of Living Tubercle Bacilli in a River Contaminated with Sewage from a Health Resort

DRS. LAWRASON BROWN, S. A. PETROFF, and F. H. HEISE, Saranac Lake, N. Y.: In 90 per cent. of cases of open tuberculosis, viable tubercle bacilli may be found in the feces. The Saranac Lake River is contaminated with sewage from Saranac village; the water was studied, samples being collected at various depths and distances. Acid fast organisms were found in all specimens taken below the sewer outfall, except in two taken below the surface of the stream. It was impossible to infect guinea-pigs with water taken 5 miles down stream. Guinea-pigs could be infected with specimens taken 2½ miles down stream on cloudy days, but not with specimens taken on sunny days. No acid fast bacteria were found in the water taken above the sewer outfall.

Polycythemia Treated with Radium

DR. JOSEPH SAILER, Philadelphia: After the usual therapeutic measures had been exhausted, radium was carefully employed. The spleen greatly reduced in size; after four months, the red cell count dropped from 7,621,000 to 5,674,000. Lately the subjective symptoms have disappeared, and the patient has become a fairly active woman. When the treatments are suspended, symptoms recur.

DISCUSSION

DR. MAX EINHORN, New York: I saw a case of this kind a year ago in a man whose cells numbered 6,500,000; his principal symptom was dyspnea. He had sought to increase the fluids of the body and so dilute the blood by taking a quart and a half of milk daily. The symptoms were much improved by this simple expedient.

Bile Content of the Blood in Pernicious Anemia

DR. M. A. BLANKENHORN, Cleveland: While the nature of jaundice in pernicious anemia was being investigated, the observation was made that many patients, although distinctly jaundiced, showed no bile in the urine. The blood plasma, however, in every such case showed a corresponding jaundice. These plasmas, when presenting a jaundice of a certain intensity, all gave a positive test for bilirubin. Urobilin was found in the plasma of none. There was often found a higher concentration of bilirubin in the plasma, coincident with the absence of bile in the urine, than is found in the plasma of patients with certain lesions of the liver which are always characterized by bile in the urine. Bile salts were found in the plasma in ten out of thirteen cases. The cases showing the highest concentration of bilirubin in the plasma were those showing evidence of the most active blood destruction. The cases showing the highest concentration of salts were those in which nerve lesions predominated.

Some Blood Pressure Phenomena in Exophthalmic Goiter

DR. A. E. TAUSSIG, St. Louis: The vascular abnormalities in exophthalmic goiter are analogous to those in aortic regurgitation. Blood pressure changes follow the same course. Pulse pressures are high as compared with low or normal diastolic pressures. As in aortic regurgitation, so in exophthalmic goiter the blood pressure in the thigh is higher than in the arm, there being a difference of from 22 to 56 mm. In nontoxic goiters, as in normal persons, the arm and thigh pressures are equal. The diagnostic value of this inequality of arm and leg pressures is doubtful, but it may be useful in distinguishing between toxic and nontoxic goiter.

Function of the Thyroid, Normal and Abnormal

DR. H. S. PLUMMER, Rochester, Minn.: The function of the thyroid is to furnish a hormone for the control of tissue metabolism. Hypothyroidism and hyperthyroidism are fluctuations in the reactions of tissue metabolism control. As to pathologic changes, inflammatory changes may stimulate hyperactivity of the gland. Both major and minor stimuli may lead to goiter. Normal stimuli overdone may lead to colloid or hyperplastic changes. Hypertrophy and hyperplasia may coexist, but it is doubtful if dividing cells can function. The evolution of hyperplastic and colloid goiters is discussed. The normal products of the thyroid are colloid and the hormone alpha-iodin of Kendall. Overactivity of metabolism is a manifestation of hyperthyroidism and depends on the thyroid hormone as to every tissue of the organism.

The Active Constituent of the Thyroid

DR. E. C. KENDALL, Rochester, Minn.: Investigation of the alpha-iodin compound, isolated from the thyroid, has shown that it possesses the characteristic activity of the gland and is its active constituent. Its isolation in pure crystalline form has been perfected, and preliminary experiments suggest that its function is concerned with the metabolism of amino acids.

Pathologic Changes in the Sympathetic System in Goiter

DR. LOUIS B. WILSON, Rochester, Minn.: We made a study of cervical and other sympathetic ganglia removed at operation and necropsy from patients with goiter, the results being controlled by a study of ganglia from nongoitrous patients. Sections of the ganglia, stained by various methods, show extensive histologic changes, consisting of various stages of cell degeneration, namely, (*a*) hyperchromatization, (*b*) hyperpigmentation, (*c*) chromatolysis and (*d*) atrophy or (*e*) granular degeneration. So far as may be determined from the small number of specimens examined (twenty-five cases), the pathologic changes in the ganglia are parallel to the stage and intensity of the symptoms of hyperthyroidism and to the hyperplastic and regressive change in the thyroid.

Pancreatic Changes in Latent Syphilis

DR. A. S. WARTHIN, Ann Arbor, Mich.: The histologic study of the material from seven necropsy cases of diabetes showed, in all, syphilitic lesions in the myocardium and aorta. The presence of spirochetes was demonstrated in five cases. In all of these cases marked changes were found in the pancreas of the nature of interstitial pancreatitis, both interlobular and intra-acinar. This led to the study of the pancreas in a large number of other cases of latent syphilis, with the result that in no case was a normal pancreas found. In all cases of latent syphilis this organ shows marked changes in the form of a diffuse or patchy fibrosis with active inflammatory foci corresponding to the localizations of the spirochetes.

Unilateral Renal Hypoplasia and Dysplasia; Relation to So-Called Hypogenetic Nephritis

DR. W. M. L. COPLIN, Philadelphia: The histologic findings in eleven cases suggest that kidneys of this type have origin in a defective angiogenesis; this occurs in intrauterine life and results in hypoplastic kidneys. The patients have high blood pressure, high protein content, and other evidences of defective elimination. Renal symptoms appear as soon as any unusual burden is put on the kidneys. In this class may be cases of painful kidney, nephritis dolorosa.

The Main Factors Affecting the Intensity of the Sounds as They Pass from the Interior of the Lungs to the Periphery of the Chest

DRS. GEORGE W. NORRIS and C. M. MONTGOMERY, Philadelphia: The main factors diminishing the intensity of sounds as they pass from within the bronchi to the external chest surface are reflection and diffusion. Reflection may be a potent factor where vibrations pass between mediums of different densities, as air and fluid or air and tissue. Sound is not much affected in its passage between fluid and tissue because the differences in density are not sufficiently marked. Marked vocal resonance occurs over solid lung because the parenchyma is airless, thus eliminating reflection in this part of the lung. The vocal resonance may also be increased when fluid separates a solid lung from the chest wall. In the normal lung, on the other hand, reflection takes place between the bronchi and the surrounding air, between the tense membranous tissues of the parenchyma and the adjoining air, and between the air in the lung and the chest wall.

Diffusion, while more or less a constant factor in all conditions, plays a special part in pleural effusion, the sounds becoming spread out or diluted as they pass from the lung surface in contact with the fluid to the point on the chest revealing diminished vocal resonance.

AMERICAN GYNECOLOGICAL SOCIETY

(Continued from page 1818)

Variations in Blood Supply of Ovary

DR. JOHN A. SAMPSON, Albany, N. Y.: The material studied consisted of six fetal tubes and ovaries and thirty adult ones in which the arteries had been injected with bismuth, and ten adult tubes and ovaries in which the veins had been injected. The uterine artery directly or indirectly supplied a varying portion of the ovary in all, the entire tube in six, the greater portion of the tube in twenty-three, and the round ligament and greater portion of the broad ligament in all but one.

In twenty-four of the thirty specimens the ovarian artery divided into two main branches, a lateral tubo-ovarian or tubal branch and a mesial ovarian, the latter anastomosing with the ovarian branch of the uterine. In six specimens the lateral tubal branch was absent. The ovarian artery supplied a varying portion of the ovary in all, the distal portion of the tube in twenty-four and portions of the broad ligament in all, but the latter to a lesser degree than the uterine. In twenty-six of the thirty specimens the uterine supplied the proximal portion of the ovary and the ovarian the distal. In four specimens in which the lateral ovarian branch to the tube was absent, the lateral tubal artery arose from the main tubal artery (uterine artery) and supplied the distal portion of the ovary, taking the place of the lateral tubo-ovarian branch from the ovarian artery. In these four specimens the distal portion of the ovary was supplied by the uterine, the middle by the ovarian and the proximal by the uterine. As the blood supply of the broad ligament is both uterine and ovarian, as the usual blood supply of the tubes is both uterine and ovarian, as the arteries of the broad ligament communicate with each other and with those of the tube and round ligament, and as the tubal arteries communicate with each other, all these structures must be looked on as containing a potential blood supply to the ovary. The actual venous outlet of the ovary is partly through the ovarian veins, partly through the uterine. Anatomic studies suggest that if it is necessary to remove a tube without removing the ovary, it should be done with the least possible disturbance of the broad ligament, and even then occasionally the blood supply of the distal pole of the ovary will be cut off; also in hysterectomy with conservation of the ovary the accompanying tube should be saved, if possible.

Radium Treatment of Three Hundred and Forty-Seven Cases of Cancer of the Uterus and Vagina

DRS. HOWARD A. KELLY and G. F. BURNAM, Baltimore: The use of radium in sufficient quantities greatly enhances the chance of permanent recovery of patients with uterine and vaginal cancers. In early and good operable cases, the use of radium combined with operation adds greatly to the chance of recovery without a recurrence. The most remarkable fact about the radium treatment of uterine and vaginal cancers is that it often clears up those cases which have extended too far locally and become firmly fixed to the pelvic wall; in other words, cases which are utterly inoperable. We have had 327 cases, including borderline cases, cancer fixed to the pelvic wall, great massive cancers choking the pelvis, and many in which there were general metastases and the radium was used to bring relief alone. Over 20 per cent. of this group have apparently been cured. In a large number of those who were not cured, the discharges stopped, pain ceased, and health was built up.

Heat as a Method of Treatment in Inoperable Uterine Carcinoma

DR. JAMES F. PERCY, Galesburg, Ill.: The whole technic can be summed up in the one statement. Do not carbonize the tissues, for in the degree that this is done, in that degree is heat penetration inhibited, and heat penetration is the vitally essential thing.

High Heat Versus Low Heat in the Treatment of Cancer of the Uterus

DR. HERMAN J. BOLDT, New York: Low heat should be reserved principally for a second application, after rapid destruction has been accomplished with high heat, and the charred eschar that was caused by the high heat has been thrown off; and for those cases in which the cancer has so far advanced that the proper application of high heat will endanger the bladder or rectum. The danger from secondary hemorrhage is not less with low heat than with high heat. No evidence has been presented that shows the superiority of one method over the other. Heat properly used and applied in correctly selected cases sometimes gives remarkably good palliative effects, but it has been conclusively shown that cancer cells are not destroyed any appreciable distance from the surface of application, certainly not deeper with low heat than with high heat.

End-Results of Treatment of Sterility

DR. JOHN OSBORNE POLAK, Brooklyn: One hundred and thirty-two uterine, and three ectopics, are the sum total of pregnancies occurring in 358 women in whom conception was a probability, or 37 per cent. In a large number of sterility cases, the women applying for relief have no chance whatever of becoming pregnant, as the pathologic condition is such as to make conception impossible. The male is largely responsible for the poor results in treatment. There is a definite chemicophysiologic factor in conception, at present unexplainable, which is a cause of preventing conception. Operative procedures on the uterus, except amputation of the hypertrophied portion, have but a slight influence on the end-results in the treatment of sterility. Each case must be individualized, and both contracting parties carefully studied before any treatment is inaugurated.

Rupture of the Scar of a Previous Cesarean Section

DR. PALMER FINDLEY, Omaha: A perfectly healed cesarean wound may be relied on to resist the forces of labor, but in view of the fact that the integrity of the wound is an unknown factor in all cases, we are constrained to exercise the utmost caution in the conduct of every case in pregnancy and labor following cesarean section. Failure to secure perfect healing is accounted for by departure from the principles of suture proposed by Sanger and by septic infection of the uterine wound. The possible existence of latent gonorrheal infection may defeat the most painstaking efforts to secure perfect wound healing. When cesarean section has been followed by a fever course, the uterine wound should be regarded as insecure in event of a subsequent pregnancy and should call for a repeated cesarean section at the onset of labor. Sterilization and hysterectomy should replace conservative cesarean section when infection is known to exist. The alternative invites faulty wound healing, if not more disastrous results. Transverse fundal, extraperitoneal and cervical incisions have not lessened the liability of rupture in subsequent labors, but, on the contrary, have probably increased the hazard. The possibility of rupture of the scar following cesarean section does not justify sterilization, but rather calls for the exercise of masterly control in the event of a subsequent pregnancy. Version, high forceps, uterine tampons, hydrostatic bags and pituitary extract should never be employed in the presence of a cesarean section. The liability of rupture is a real danger and should stand as an argument against the increasing tendency to widen the scope of elective cesarean operations.

Painless Labor

DR. J. CLIFTON EDGAR, New York: Never before has the need for an artificial painless labor been more urgent. Shock from pain in labor in the highly civilized neurotic woman must be reckoned with in the general childbed mortality. Painless labor in these women is a life-saving measure. The only absolutely painless labor is the one terminated by sur-

gical means with complete anesthesia. The most satisfactory method combines opium and antispasmodics for the first stage, with possibly vapor narcosis toward the end of this stage, and nitrous oxid-oxygen analgesia or obstetric ether or chloroform for the second stage, pushed to anesthesia for the perineal stage. Possibly forceps delivery with vapor anesthesia may be used to eliminate part of the second stage. Lessening or abolishing the pain of labor may in the future limit birth control and criminal abortion. Drug addiction after a prolonged drug narcosis in the neuropathic, is a possible contingency. The dangers to the unborn or newborn child are negligible when drug narcosis is limited to the first stage.

THE AMERICAN NEUROLOGICAL ASSOCIATION

Forty-Second Annual Meeting, held at Washington, D. C., May 8-10, 1916

(Concluded from page 1888)

The Effects of Laminectomy and Simple Exposure of the Cord on the Reflexes and on Some Symptoms of Spinal Disease

DRS. PEARCE BAILEY and CHARLES A. ELSBERG, New York: In a large number of spinal operations, remarkable changes in the skin and tendon reflexes were observed. Laminectomy and exposure of the spinal cord frequently have a marked influence on the symptoms and physical signs of spinal disease. In some instances complete and permanent relief has followed the operation.

DISCUSSION

DR. ERNEST SACHS, St. Louis: There are two points which struck me forcibly, that is, these changes lasted at most only forty-eight hours, frequently only twenty-four, and in the second place, with one or two exceptions most of the changes recorded were changes in which spasticity improved to the point of normal reflexes or in which normal reflexes subsided and became really subnormal. I should like to ask Dr. Elsberg whether a possible explanation may be that it is due to a temporary loss of cerebrospinal fluid. I think it has been demonstrated pretty conclusively that it takes from twelve to forty-eight hours for cerebrospinal fluid, if it has been lost in a considerable quantity, to reform. In the second place, these symptoms that he has described may be due to a cutting of the inhibitory influence of the central nervous system. May it not be that the temporary removal of the cerebrospinal fluid opens these central paths again and in consequence the inhibition of the central nervous system comes into play again?

DR. JAMES J. PUTNAM, Boston: Many years ago Hitzig reported certain effects due to laying bare the cortex of the brain. Simple exposure had a very considerable effect. A great many years ago I had under my care a patient with an intramedullary spinal tumor which was operated for by Dr. Keen of Philadelphia, with the result of finding that nothing could be removed. The patient went on with complete paralysis of his leg, and then he developed very intense, almost unbearable, pain in the arms. Dr. Warren then operated. The spinal canal was reopened, and the patient's pain went away and never came back again. I have done quite a number of lumbar punctures for the relief of dizziness. In trying to explain the favorable result in these cases, I could not find any better way to account for it than that it broke up the "habit" of the nervous system. I think there is distinctly such a thing. At any rate, in a great many kinds of conditions one sees results which could not be explained under any other hypothesis.

DR. FOSTER KENNEDY, New York: I have seen in cranial cases, as well as spinal cases, when the patient was coming out of the anesthetic, that the reflexes were abolished, and I have seen an extensor plantar reflex and so-called Babinski sign not change to flexor, but become absent and later reappear as before. I would suggest to Dr. Elsberg the question as to whether or not the anesthetic had any influence.

DR. FRANCIS X. DERCUM, Philadelphia: This discussion recalls to my mind some experiences I had with the late J. William White at the Philadelphia Hospital, a number of years ago, in which we noted a quite persistent improvement in several of our cases for which we could not account. We found no lesion in the cord, and the patients simply got better after the laminectomy. We thought it due to some unexplained improvement of nutrition, something which brought more blood in the healing process to the wounded cells, and that the nutrition of the cord itself was raised and some restoration of function followed.

DR. E. W. TAYLOR, Boston: Work which I have been doing for a couple of years may perhaps throw a side light on this question. In cases in which the patients have been anesthetized, no matter what the operative procedure, invariably the acetone and diacetic acid varies anywhere from thirty-six to seventy-two hours, and the muscular and mental activity of these patients is pretty near parallel with the persistence and amount of acidosis. I should feel that the change noted in these cases is one of depression and that perhaps an investigation along the line of acidosis in the changes in the reflexes would be fruitful.

DR. JOSEPH COLLINS, New York: I think that the explanation which Dr. Taylor has just given is the proper explanation and the one that will stand the test. I would suggest, therefore, that sodium bicarbonate be given in moderate saturation. In a considerable number of cases of laminectomy done by Dr. Elsberg for me, there has been no improvement whatsoever in any of the morbid manifestations of disease.

DR. CHARLES A. ELSBERG, New York: We also have a theory to explain these symptoms, but I do not think it is worth very much more than the other theories proposed. I investigated these cases from various points of view. I have, for example, watched the condition of the reflexes in a considerable number of patients who were under prolonged anesthesia not only after operations on the cerebrospinal system, but also after other operations, and have seen suppression of the reflexes for a few hours until the patient was fully awake, but never after that. We thought very much over the question of whether the escape of cerebrospinal fluid had anything to do with it. We must remember that in opening the door we are exposing the cord to a higher pressure than it was before. In addition to that I have injected considerable amounts of saline solution just before the dura was closed in order to have it full of cerebrospinal fluid, and it showed nothing different from those in whom the spinal fluid had escaped. The question of acetone is one that I am unable to speak about. I have examined a number of patients who had acetonuria and who have regularly a depression of normal reflexes.

Progressive Atrophy of the Globus Pallidus

DR. J. RAMSAY HUNT, New York: Paralysis agitans undoubtedly includes a variety of types which are related clinically but which must present differences in the localization and character of the underlying pathologic lesion. I made an effort to isolate a special group of paralysis agitans cases, namely, the juvenile type, on the basis of certain definite changes in the motor cells of the corpus striatum. In one case, the sole lesion was atrophy and disappearance of the large motor cells of the globus pallidus system. The globus pallidus system is the motor center proper, while the neostriatum (caudate and putamen) forms an inhibitory and coordinating cortical mechanism. The mechanism which is involved in this disease is the motor or efferent system of the globus pallidus. A destructive lesion in the case of the globus pallidus produces not only paralysis of certain automatic and associated movements, a slowness of movement and loss of motor initiative, but a great increase of muscular tonus as well. An affection of the small cell system of the neostriatum releases the motor mechanism of the globus pallidus from control, and there result the phenomena of the chorea of Huntington. A destructive lesion of both types of cells produces chorea, athetosis, spasms, rigidity and tremor in various combinations.

DISCUSSION

DR. BERNARD SACHS, New York: I am absolutely in sympathy with Dr. Hunt's efforts to separate some of the groups of paralysis agitans. One of his cases I had an opportunity to study. The case of this boy impressed me at the time by the fact that here was a case of paralysis agitans appearing in early life and with some of the symptoms that we ordinarily associate with disseminated sclerosis. It may be due to changes in the globus pallidus, and there may be some explanation for the lesions in other cases of paralysis agitans. These changes in the globus pallidus are the only ones Dr. Hunt has found. There is danger of making that the seat of the chief pathologic lesion. The question arises whether they are not terminal changes. Have they any actual causative relation to the disease which has lasted twenty years? In a case of this sort it would be absolutely necessary to see the anterior pole of the brain and the very lowest part of the spinal cord in order to be sure that we had really got at the chief changes underlying the disease.

DR. J. RAMSAY HUNT, New York: Of course this is only one case; but one case, if thoroughly studied, is as good as a thousand, and I feel that I am right. As to the diminution of cells, I have been very careful in making comparison with the normal count, not just guessing. Then, the cells show all the changes of chronic atrophy. There are two great cell groups here, the large cell group of the globus pallidus and a smaller group. I specify their function, and it works with the other syndrome in interpretations. Then the phylogeny and anatomy all favor such an idea. These tracts of the system develop very early in the life of the fetus.

Werdnig-Hoffmann, Early, Infantile Progressive Spinal Muscular Atrophy

DR. M. A. BLISS, St. Louis: An apparently healthy and intelligent child, who has made the normal progress of an infant for the first few weeks or months of life, begins, without obvious cause, to lose power. The weakness is first noticed in the legs and in the hips; as the disease progresses, the lower portion of the back becomes affected, so that the child is no longer able to sit up. This disease pursues a progressive course, the shoulders, thighs, upper arms, forearms and legs being successively involved, and finally the muscles of the hands and feet. Fibrillar twitching of the muscles may be present, bulbar symptoms may supervene, and contraction of the limbs may be present in some cases. The limbs are usually absolutely flaccid, and the deep reflexes are abolished. There is no pain or tenderness, and no disturbance of sensation. Death takes place from failure of respiration or bronchopneumonia. Although pathologically these cases closely resemble the progressive muscular atrophy of adults, they present considerable differences. The disease starts in the proximal muscles, and only later affects the hands. The atrophy is not so striking as in adult cases; in fact, the infant often appears well nourished. Cases with spastic condition of the legs are rare.

Familial Spastic Paralysis

DR. C. EUGENE RIGGS, St. Paul: The classical syndrome of this disease is spastic paralysis of the lower extremities, often involving the trunk muscles, occasionally the upper extremities and sometimes the face muscles as well. The muscles of the upper and lower extremities are hard, and resist passive movements. Reflexes are increased; ankle-clonus and the Babinski reflex are commonly present. Pes equinus and adductor contractions occur. Some patients soon become bedridden, while others may walk for some time. Optic atrophy may occur, as may also weakness of the eye muscles, nystagmus, vertigo, idiocy, speech defects, bulbar symptoms, atrophy of the small muscles of the hand, bodily defects, kyphosis and scoliosis. Sensation is normal, and there are usually no involuntaries. I had three cases of the same parents; neither of the parents was alcoholic or syphilitic. They had three other children who did not become affected.

DISCUSSION

DR. JOHN H. W. RHEIN, Philadelphia: About two years ago I reported the case of a family of which five members were affected in the same way. One child escaped. All these children developed the disease in the fourteenth year of age. One of the children died at the age of 14 after a serious convulsion. The Wassermann reaction of the father and mother was negative. This was the only generation in which this occurred.

Diagnosis of Subacute Combined Sclerosis of the Spinal Cord Associated with Severe Anemia

DR. WILLIAMS B. CADWALADER, Philadelphia: I have the histories and the results of examination in nine cases which I believe conform to the type of combined sclerosis of the spinal cord associated with anemia. In each of these cases more or less disturbance of voluntary motor power of the lower extremities, with ataxia and moderate spasticity, was observed. The tendon reflexes were exaggerated, and in all but one the presence of a typical Babinski sign was demonstrated. Two types of sensory phenomena were recorded, subjective and objective. The patients all complained of subjective disturbances of sensation, variously described as numbness, burning, tingling, coldness and heaviness of the lower extremities or of the hands. Examination showed that tactile sensation and sensations for heat, cold and pain were normal in all but one case. Bone sensation, as tested by the appreciation of the vibrations of a tuning fork, was lost or modified in the lower limbs in every case. The inability to recognize posture of the toes, associated with diminished appreciation of passive movements of the toes or fingers, was present in all cases. The various deep sensations and stereognostic perceptions pass through only the long fibers of the posterior columns, and it is the long fiber system alone that is involved in this type of combined sclerosis. It is clear, therefore, that, by applying known pathologic and physiologic facts it is possible, in most cases, accurately to determine the location and extent of the sclerosis when it occurs within the posterior columns, and, by determining the location and extent of the sclerosis, a positive opinion as to the nature of the condition that has produced it can be given.

DISCUSSION

DR. JAMES J. PUTNAM, Boston: Many years ago I saw eight cases, and had four postmortem examinations. Dr. Cadwalader speaks of the whole picture as being that of a spastic trouble even in the early stages. Certainly in almost all the cases I have seen, and Dr. Taylor and I at one time reported fifty, that has not been the case. Whether we missed the early stage I do not know, but I do not see how that can have been, for I have seen these patients from the very earliest moment. I have seen a very considerable improvement in at least one of these patients through training similar to that one uses in tabes.

DR. C. EUGENE RIGGS, St. Paul: I have in one or two instances noticed very marked improvement from the intravenous injection of salvarsan.

DR. CHARLES L. DANA, New York: This seems to be a disease which is increasing in this country. If you see these patients very early and recognize their character, you can sometimes keep them well for years. I have a patient now in the fourth year, and he is distinctly better than when I first saw him.

DR. L. F. BARKER, Baltimore: In my experience there are two extremes of clinical symptoms. Sometimes the extreme is on the ataxic side, sometimes on the spastic side. In other words, sometimes the degeneration is more marked in the lateral funiculi and sometimes in the posterior funiculi. The emphasis placed on cases occurring without anemia is important. I believe it does make clear that the cord lesion is not due to anemia, but the cord lesion and the anemia probably have a common cause. It is a disease of the whole body. There is another factor which should always be kept in mind: All these patients have no acid in the stomach juice. It looks as though it were a toxic affair. Another point I should emphasize is the occurrence sometimes in families. I remember distinctly two instances in which two brothers were affected. I have seen the best results from large doses of hydrochloric acid after meals and arsenical preparations internally, through salvarsan, together with a period of rest

and general upbuilding. I have one man who has been very well for several years, his hemoglobin has gone to 108 and he is very robust now. His hemoglobin was down below 30 per cent. at one time. I cannot believe he will continue well. I think he will ultimately die of the disease.

Facial Diplegia in Multiple Neuritis

DR. HUGH T. PATRICK, Chicago: The combination of complete double facial palsy with less intense involvement of the extremities is the striking feature. In only one instance is the facial palsy partial. But the degree of quadriplegia is exceedingly variable. Assuming that multiple neuritis is always caused by a poison, and knowing that certain tissues are peculiarly vulnerable to certain poisons, perhaps we are equally reasonable in saying that certain poisons have a special predilection for certain tissues. This cannot confidently be answered in the affirmative. But the negative aspect is interesting. Apparently the most frequent causes of multiple neuritis do not cause facial diplegia. No case has been due to a metallic poison (except probably one of plumbism) and I believe no case is due to alcohol, although one patient was a wine dealer. I have found no typical case due to diphtheria. There is no case following typhoid unless my first case is one. The most frequently surmised cause has been influenza, but in no case was this definitely ascertained, and in only four out of thirty-four cases was it thought highly probable.

DISCUSSION

DR. SIDNEY I. SCHWAB, St. Louis: I have had two patients; one died. In both the bladder and rectal reflexes were lost. I have an idea that the method by which the spinal cord is finally attacked is through the sheath of some of the peripheral nerves attacked. I believe it is impossible anatomically to produce bladder and rectal insufficiency purely through the peripheral mechanism. We must conclude that in these cases there is some definite process which gets to the cord along the nerves which happen to be attacked. Another feature is the curious emotional state of these patients. The neuritis itself may be somewhat insignificant, but in the midst of this neuritic complication the sudden or even gradual paralysis causes in these patients a most profound emotional disturbance. The last patient I had became very emotional and very depressed, slightly maniacal, and with the disappearance of the facial diplegia these symptoms disappeared.

DR. WILLIAM G. SPILLER, Philadelphia: I can add another case of facial diplegia which occurred in neuritis. A year or two ago I had a man in my service with marked neuritis of the Landry type. There had been ascending paralysis. He had marked diplegia facialis. It was purely alcoholic. He had been admitted to the "drunk" wards many times. In regard to Dr. Patrick's statement regarding the possible toxic factor, during the past winter there has been an interesting case in the Philadelphia Hospital, that of a boy recovering from tetanus. A facial palsy developed during the fourth or fifth week from a draft. I thought that the tetanus intoxication predisposed the lad to the effect of the draft.

DR. ARCHIBALD CHURCH, Chicago: Last November I saw a young man who presented the condition Dr. Patrick outlined, rather mild multiple neuritis with diplegia. There was a most painstaking search of the secretions of the body, spinal fluid, blood and everything else which was open to laboratory investigation, but these were entirely negative. He was excessively fond of candy, and ate from 1 to 2 pounds a day. After the onset of symptoms, which were largely sensory at first, a severe diarrhea developed. He recovered rapidly and was discharged in ten weeks able to walk and feeling quite comfortable. Another case, which I saw many years ago, occurred with acute intestinal disturbance.

DR. CHARLES L. DANA, New York: I watched cases of neuritis in alcohol wards for twenty-five or thirty years, and there never occurred a case of facial diplegia. I used to look out for that phenomenon because many years ago I had a case which falls definitely into the group Dr. Patrick described. A young man, very active and a moderate drinker, went to North Carolina, and while there was exposed to a good deal of cold and wet, and possibly ate canned food. He developed a slight degree of multiple neuritis and very complete facial diplegia. He gradually but slowly recovered from his neuritis and almost completely from the diplegia. Though he was somewhat depressed, he apparently got well. About ten years afterward he developed melancholia and shot himself. I think the suggestion Dr. Patrick made that these things are toxic in character is in harmony with what we have been believing in regard to the pathology of paralysis. I have for a long time considered it an infectious neuritis, and I do not see that the fact that a neuritis is unilateral may exclude infection.

DR. SMITH ELY JELLIFFE, New York: What lies behind the individual susceptibility in these cases? It certainly is recognized that the toxic factor may be one of the links in the chain, but what about the nervous system itself? What about the variations in the nervous system? One must interpret the hysterical monoplegia of toxic origin, the diplegia cases of bacterial origin. In such cases one must go to the hysterical side of the mechanism.

DR. SAMUEL LEOPOLD, Philadelphia: I wish to place on record a similar case in which the etiology was clear. It showed the typical facial diplegic and multiple neuritic phenomena in which the origin was given as quinsy.

Obstetric Paralysis

DRS. JOHN JENKS THOMAS and JAMES WARREN SEVER, Boston: There is no evidence from our experimental work, or clinical observation, to support the theories of Lange and T. Turner Thomas that the primary cause of obstetric paralysis lies in an injury of the capsule of the shoulder joint, or a dislocation, with secondary damage to the nerve trunks. This theory gets no support from experimental work, and in addition does not account for the distribution of the paresis of muscles generally seen, such as the spinati, supplied by the suprascapular nerves, or the frequent involvement of the sympathetic fibers going to the pupil and eyelid, often seen in cases of paralysis of the whole arm, and of the lower arm group. The partial dislocation of the head of the humerus backward, the bending down of the tip of the acromion and the forward dislocation of the upper end of the radius are all secondary changes, due to the formation of contractures in the stronger or unaffected muscles. Dislocations of the shoulder, separation of the epiphyseal end of the humerus, or fractures of its shaft, like fractures of the clavicle, are infrequent accidents, and while they may be unaccompanied by an injury of the plexus, more frequently they are complicating injuries, which rarely cause permanent difficulties. The treatment, to be effective, must be adapted to the conditions in the individual case. Treatment by massage of the paralyzed muscles and development of them as they recover through educational exercises are necessary in all cases in which the plexus has been injured to more than a very slight extent. Resection of the plexus and transplantation of torn nerve roots of the plexus are to be reserved for cases which do not show evidence of recovery of function in definite groups of muscles within a reasonable time, generally not less than six months, though frequently this time needs to be extended to a year, a year and a half, or occasionally even longer. The late complicating deformities about the shoulder and elbow joints should be treated on orthopedic principles. We resort to division of the tendon of the subscapular muscles outside the joint. These cases need careful after-treatment by passive movement massage, and educational exercises to bring about free and natural movement in the joints and use of the extremity.

DISCUSSION

DR. CHARLES K. MILLS, Philadelphia: I believe that these obstetric palsies are due, in a large percentage of the cases, not to the direct lesion of the brachial plexus or of the shoulder, but to an avulsion of the nerve roots of the plexus. Traction on the plexus occurs, with avulsion of the nerve roots or a certain part of the nerve roots of the plexus and, therefore, a total and permanent destruction which can never be very fully or largely repaired except by adaptation or compensatory operation.

DR. E. W. TAYLOR, Boston: I was called to deliver a woman with a badly deformed pelvis. It was necessary to do version in which the extraction was breech extraction. Feeling that this type of lesion was exceedingly apt to occur, I put most of the traction on the lower extremities of the child until they were so damaged I did not dare continue; then the pressure was exerted over the shoulder, and a lesion of the brachial plexus occurred. After delivery we found symptoms of double hemorrhage from both hemispheres.

DR. JOHN JENKS THOMAS, Boston: The lesion in these cases is not a constant one. It varies in severity and in the situation of the injury. Occasionally avulsion of nerve roots is seen. Some of our cases have shown separation between the nerves of the plexus. I do not agree in the advisability of early exploratory operations in all cases. That should never be done in cases in which, at the time, soon after birth, we find the injury limited to the upper arm group of muscles. These cases practically all show partial recovery after operation. The question is somewhat different when we come to total arm paralysis. I think our work has given us a clue as to why this is so. In the upper arm paralysis, although the nerves are stretched, you have fraying out of the fibers and hemorrhage within the sheath, though there is no complete separation or tear of the plexus. The only complete injury we find, then, is the tearing off of the suprascapular nerve. To suture the suprascapular nerve, which is very small in the infant, I think is practically impossible. My plea is that we should make our treatments suit the individual case.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Tenth Annual Meeting, held at Saratoga Springs, May 16-18, 1916

(*Continued from page 1817*)

Metabolism in Gout

DR. NELLIS B. FOSTER, New York: In gout, as in health, the sources of uric acid do not differ; there is no new source of supply. It seems likely, then, that the uric acid increase in the blood in gout is due to defect in excretion. The same increase in the blood is noted in renal disease. For the deposition of uric acid as tophi, no explanation is at hand. It is not due to the blood being saturated; serum dissolves more uric acid than water because of the phosphate content. The explanation is probably to be found in the chemical state of uric acid, which exists in two forms in many animals, free and combined. This is not demonstrated in man as yet, but evidence pointing to this conclusion is accumulating.

Treatment of Gout

DR. ARTHUR F. CHACE, New York: Treatment is directed toward lessening the formation of uric acid and to facilitating its elimination. The elimination of uric acid is not increased by giving quinin, colchicum or diuretics. Alcohol, tea and coffee cause a retention of uric acid in the blood. A purin-free diet is given containing all foods except meat, meat extracts, peas, beans, spinach, tea, coffee and alcohol, and an accessory diet consisting of meats and fish, of which the uric acid forming possibilities are known. By determining the eliminative capacity of the body for exogenous uric acid, it is possible to keep the intake of purins well within the limit. Or the number of days required to eliminate the uric acid arising from a definite amount of purin substance can be ascertained, and articles on the accessory diet list given at such intervals that retention of uric acid is avoided. The continuous use of alkaline drinking waters induces a deposition of sodium biurate in the joints and cartilages and is capable of precipitating an acute attack of gout. The value of the periodic administration of atophan or, in nonnephritic cases, of salicylates, in depleting the blood temporarily of uric acid, is a means of giving symptomatic relief and preventing the deposition of uric acid in the joints; thereby aborting acute gouty attacks. Exercise, massage and hydrotherapy assist in the elimination of uric acid, while the treatment of acute attacks is limited to the giving of colchicum, large doses of hydrochloric acid, salicylates, water and the application of soothing lotions.

Torsion of the Pedicle of Ovarian Cysts Complicating Acute Appendicitis

DR. ROSS D. LOOP, Elmira: I have found eight cases in the literature, and can add four personal cases. In all these cases the appendix was primarily involved. The diagnosis of cysts should be made before acute symptoms supervene. The causes of torsion are many: The tendency for organisms to grow spirally, the length of the pedicle, the freedom from adhesions, the heavy lobular space of the cysts, all are predisposing causes. Emptying or filling of the bladder or rectum, violent peristalsis, increased pressure, coughing, vomiting, lifting, falls or jolts, all cause rotation in a cyst which is often insecurely balanced. Muscle spasm, vomiting and distention, so often accompanying appendicitis, are frequent features that will favor torsion. The results of sudden strangulation are gangrene, infection and peritonitis, without any increase in the size of the cyst.

DISCUSSION

DR. W. M. BROWN, Rochester: I have observed one case in which the only diagnosis made was appendicitis. There seemed to be a very marked right-sided pathologic condition. The patient was extremely ill. I opened the abdomen and found the appendix to be absolutely normal. There was a cyst of 6 ounces' content which evidently had ruptured shortly before the operation, because the viscid fluid was lying in the pelvis. The cyst was as large as a croquet ball, and gangrenous. The patient made a good recovery.

DR. GEORGE GRAY WARD, New York: I have known a game of golf to accomplish rupture of a cyst. There was violent pain, and at operation a strangulated cyst was found.

DR. MILO L. SECCOMB, Auburn: I had a case of a child of 9 years with an attack of apparent influenza. It was thought that the bladder was distended. At operation a cyst was found with a twisted pedicle.

(*To be continued*)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Public Health, Boston

May, VI, No. 5, pp. 431-532

1 Diphtheria Immunity. Its Determination by Schick Test. W. H Park and A. Zingher, New York.
2 Health of Department Store Women in New York City. K. Mann, New York.
3 Heart Disease and Its Industrial Relations. W. Coleman, New York.
4 Classification of Hazardous Occupations. E. R. Hayhurst, Columbus.
5 Relationship of Impaired Physical Condition to Accidents. C. G. Farnum, Peoria, Ill.
6 Health Hazards of Metal Mining Industry. A. J. Lanza, Washington, D. C.
7 Some Aspects of Home Use of Proprietaries With Children. T. C. Merrill, Washington, D. C.
8 Grip Epidemic of Winter of 1915-1916. L. I. Dublin, New York.
9 Bacterial Counts in Water Examination. J. Race, Ottawa, Canada.
10 Public Health Publicity; Art of Focusing Public Opinion. E. A. Moree, New York.

American Journal of Tropical Diseases and Preventive Medicine, New Orleans

May, III, No. 11, pp. 579-624

11 *One Hundred Cases of Malaria Treated by Mercuric Chlorid Intravenously. N. Barlow, St. Louis.
12 Use of Alcresta Ipecac in Amebic Dysentery; Report of Cases. W. Allan, Charlotte, N. C.
13 Mosquitoes of Mecklenburg County, N. C. H. P. Barret, Charlotte, N. C.
14 Mycetoma in Western Panama. W. T. Burres, Panama.
15 Intestinal Bilharziosis in Western Panama. W. T. Burres, Panama.

11. Mercuric Chlorid Intravenously in Malaria.—A solution of mercuric chlorid in physiologic salt solution was used by Barlow of such strength that 10 c.c. of solution represented

1/8 grain of mercuric chlorid. The iodin used to disinfect the arm was washed off with alcohol, to avoid any possible formation of mercuric iodid. An analysis of all sixty-nine cases recorded indicates that when there were but a small number of parasites in the blood, mercury usually brought about a complete sterilization at the first injection. This result was obtained in some cases when there were as many as three parasites in each field. With much higher infections the fever was reduced, sometimes disappeared after a few days to return later, and sometimes after a reduction, again rose but not to the point which it had reached previous to the injection. Ill effects from mercury were seen in very few cases, and in these were very slight. Diarrhea was observed in eleven cases, but rarely persisted more than one day, was not violent, or severe in character, and indeed, could rather be welcomed than looked on with disapproval. Salivation occurred in but one case which was treated with three injections within five days. In this case, it was very slight and disappeared three days later. It seems that the constitutional effects of mercury, given intravenously, appear very quickly if they are to appear at all, and that their disappearance is equally prompt. There seems to be but little danger, therefore, of the cumulative effects if an interval of four days or over is left between the doses; if such effects do appear, they will be very slight and will be promptly noticed. Nephritis was not produced in a single case. Phlebitis, at the point of injection, was observed in only three or four cases, and should not occur if a small sharp needle is used with careful technic.

No routine treatment should be followed, says Barlow, but every case should be treated actively until all symptoms of malaria have disappeared, until the blood is practically normal, excepting for a moderate anemia and leukopenia consequent from the administration of quinin, and above all, until the spleen has returned to normal size and is not tender. During the fever all adjuncts to treatment, such as rest in bed, laxatives, restricted diet, and in severe cases, intravenous or multiple intramuscular injections should be used. Quinin should be given daily according to the method found most efficacious by the experimenter, and an injection of mercury of one-fourth grain for each 150-pound weight of patient should be given at such intervals as may seem best; Barlow advises weekly intervals. If the reduction of the size of the enlarged spleen be not very rapid and accomplished at the rate of at least 1 inch a week, he advises that search should be made for uncinaria, and if present this should be treated as soon as the fever has disappeared.

Arkansas Medical Society Journal, Little Rock

May, XII, No. 12, pp. 297-312

16 Acute Intestinal Obstruction. W. F. Smith, Little Rock.
17 Trachoma. C. N. Pate, Little Rock.
18 Sympathetic Ophthalmia. E. M. Hudson, Little Rock.

Boston Medical and Surgical Journal

June 1, CLXXIV, No. 22, pp. 775-814

19 Five Years' Progress in Diagnosis and Treatment of Tuberculosis by Massachusetts Physicians. J. B. Hawes, 2d, Boston.
20 *Disinfection of Septic Joints. F. J. Cotton, Boston.
21 Classification of Renal Infection, With Particular Reference to Treatment. H. Cabot and E. G. Crabtree, Boston.
22 *Bacilli Dysenteriae as Cause of Infectious Diarrhea in Infants. C. Ten Broeck and F. G. Norbury, Boston.
23 *Intraspinal Injections of Bichlorid of Mercury. E. L. Hunt, New York.
24 Loss of Sight From Retrobulbar Neuritis Due to Accessory Sinus Disease; Report of Two Cases. L. E. White, Boston.

20. **Disinfection of Septic Joints.**—Cotton emphasizes the fact that the joint itself—the closed joint—has a high resistance to septic infections, that the joint cavity is far more capable of disinfection than the surrounding muscular and intermuscular spaces; but only when it is kept apart—as a closed joint. Cotton cites cases in which the joint was irrigated for fifteen minutes with 1:15,000 of bichlorid in salt solution, then flushed with simple salt solution; the capsule was then accurately stitched together. This treatment is held to be harmless and efficacious. Cotton is not sure that corrosive is the last answer, but he is convinced that we should disinfect and then seal the joint to protect it.

22. **B. Dysenteriae as Cause of Infectious Diarrhea in Infants.**—In seventy-five cases of infectious diarrhea studied by Ten Broeck and Norbury the dysentery bacillus was recovered from the stool in fifty-one instances, or 68 per cent. In five other cases they were unable to isolate it from the stool, but found it in cultures made at necropsy, thus making a total of fifty-six instances, or 74 and 6.10 per cent. of the total number of cases in which the dysentery bacillus was found.

23. **Intraspinal Injections of Bichlorid of Mercury.**—Additional cases are cited by Hunt to show that the administration of bichlorid of mercury directly into the spinal fluid gives practically the same results as the administration of mercurialized serum. It has the advantage over the latter of simpler technic, shorter methods, and easier administration, with less opportunity of infection. Both methods, that of the mercurialized serum and that of the bichlorid directly injected into the spinal fluid, can be considered as valuable substitutes for the administration of salvarsan. Certainly no ill results can accrue from the direct intraspinous injection of one fiftieth of a grain of bichlorid of mercury in syphilis of the nervous system. It is well to make the initial dose small; it is therefore better to begin with a dosage of one sixty-fourth of a grain and later increase it to one fiftieth.

Georgia Medical Association Journal, Augusta

May, VI, No. 1, pp. 1-16

25 Review of Medical Affairs in Georgia. W. S. Goldsmith, Atlanta.

Iowa State Medical Society Journal, Des Moines

May, VI, No. 5, pp. 199-238

26 Surgical Treatment of Exophthalmic Goiter. C. J. Rowan, Iowa City.
27 Ectopic Gestation; Report of Three Cases. A. D. McKinley, Lawler.
28 Diseases of Maxillary Antrum. W. H. Johnston, Muscatine.
29 Appendicitis and Gallbladder Infection. N. Schilling, New Hampton.
30 *Strychnin Not a Stimulant. C. S. Chase and B. H. Schlomovitz, Iowa City.
31 Intranasal Treatment of Frontal Sinus Disease. E. Cobb, Marshalltown.
32 Educational Prophylaxis. E. L. Rohlf, Waterloo.

30. **Strychnin Not a Stimulant.**—The authors contend that strychnin unsupported by unquestioned, specific, selective stimulants in pathologic situations, merits condemnation, and that its supposed unaided supportive action might be positively dangerous.

Journal of Infectious Diseases, Chicago

June, XVIII, No. 6, pp. 569-684

33 *Immunologic Studies on Hodgkin's Disease. J. J. Moore, Chicago.
34 Study of Gas Production by Different Strains of Bacillus Abortivo-Equinus. E. S. Good and L. S. Corbett, Lexington, Ky.
35 *New Culture Medium for Isolation of B. Typhosus From Stools. J. E. Holt-Harris and O. Teague, New York.
36 *New Differential Culture Medium for Cholera Vibrio. O. Teague and W. C. Travis, New York.
37 Diphtheria in Cleveland; Diphtheria-Carriers. R. G. Perkins, M. J. Miller and H. O. Ruh, Cleveland.
38 Variation of Gemmation of Blastomyces Dermatitidis in Tissue Lesion. H. W. Wade, New Orleans.
39 *Coexistence of Antibody and Antigen in Body. B. S. Denzer, New York.
40 *Improved Brilliant-Green Culture Medium for Isolation of Typhoid Bacilli From Stools. O. Teague and A. W. Clurman, New York.
41 *Method of Preserving Typhoid Stools for Delayed Examination; Isolation of Typhoid Bacilli From Stools. O. Teague and A. W. Clurman, New York.

33. **Immunologic Studies on Hodgkin's Disease.**—Moore reports experiments made to ascertain whether an immune serum could be produced which would have either palliative or curative action in this disease. In April, 1914, immunization of a horse was commenced with sixteen strains of diphtheroid organisms obtained from cases of Hodgkin's disease. Killed bacilli were injected intravenously. The horses were immunized by repeated intravenous injections. In complement fixation tests this immune serum bound complement when used with these same organisms as antigens in amounts as small as 0.0005 c.c. Complete hemolysis occurred with control antigens of staphylococci; streptococci, diphtheria bacilli, gonococci, and lipoidal extracts and 0.1 c.c. of the

immune serum. Complete hemolysis resulted when control horse serums were added to the diphtheroid antigen in amounts of 0.1 c.c.

Agglutinin was found to be increased fourfold by the immunization. The refined serum produced fewer allergic reactions than the whole serum. Monkeys were immunized with the same organisms by both subcutaneous and intravenous inoculations. An increase in complement binding amboceptors was found in the serum after the injections. By similar methods immune serums were obtained from rabbits. Soluble toxins were not formed by these organisms when grown in glucose broth. Complement fixation tests were made on ten individuals having Hodgkin's disease and in no case was there inhibition of hemolysis with antigens of the mixed cultures isolated from Hodgkin's disease. In two cases antigens prepared from organisms cultured from the patient's glands were used, with negative results. Vaccination with these organisms did not appear to increase the complement binding antibodies in patients. Complement fixation tests on the serums of these patients with control antigens were negative in all except one instance in which positive Wassermanns were repeatedly obtained. Agglutination experiments with the serums of two patients were likewise negative. Complement fixation tests made on serum from cases of lymphosarcoma, lymphatic leukemia, chronic arthritis, and tuberculosis, diseases in which diphtheroid organisms have been isolated, all reacted negatively with the various antigens used.

35. **Medium for Isolation of Typhoid Bacilli from Stools.**—The medium devised by Holt-Harris and Teague consists of a combination of methylene blue and eosin in nutrient agar containing lactose and saccharose. On plates of this medium after eighten hours' incubation the colonies of typhoid are colorless and transparent, while those of B. coli are a deep black and do not transmit light. The medium immediately around the colonies of B. coli remains practically unchanged. Hence the plate is workable even when the colonies are close together. More of the feces, therefore, can be safely inoculated on this medium than on the Endo plate and it is to that extent more delicate and to be preferred.

36. **New Differential Medium for Cholera Vibrio.**—On sugar free nutrient agar to which Teague and Travis added 1 per cent. saccharose, 0.25 per cent. nutrose and 0.0625 per cent. bluish eosin, the cholera colonies have red centers, while the colonies of B. coli are uniformly pink.

39. **Coexistence of Antibody and Antigen.**—Antigen both in the cells and in the blood, and antibody, likewise, in the cells and in the blood, were demonstrated by Denzer during a period of three weeks succeeding the injection of a foreign serum into a guinea-pig. Antigen in the cells was demonstrated for a period of seventeen days after injection; antigen in the blood also for seventeen days. After this time these factors apparently disappear. Antibody was demonstrable in the cells from the ninth day onward, and was in the blood after the fourteenth day.

40. **Brilliant Green Medium for Typhoid Bacilli.**—The eosin brilliant green agar containing lactose and saccharose is the medium which Teague and Clurman recommend for the isolation of typhoid bacilli from stools. After eighteen hours' incubation the typhoid colonies by reflected light are grayish in color, while the colonies of B. coli have red centers. By transmitted light the typhoid colonies are transparent and colorless, while colonies of B. coli show dark centers. On further incubation the typhoid colony becomes pink and the whole colony of B. coli becomes dark red or dark purple in color; the typhoid colony remains translucent, while the colony of B. coli becomes more and more opaque. The typhoid colony may show the center somewhat darker than the periphery, but the whole colony is much paler than that of B. coli and is readily distinguished from it. If the colonies are packed closely together on the plate, this differentiation is obscured, the typhoid colonies assuming a darker color and those of B. coli failing to develop centers properly; however, on account of the inhibition which the medium exerts on the growth of most strains of B. coli, this is not likely to occur.

41. **Isolation of Typhoid Bacilli from Stools.**—Teague and Clurman advise that the feces be added to 30 per cent. glycerin not more than 1 part of feces to 2 parts of glycerin, in a bottle with a screw top such as is used for sputum. The bottle should be shaken well, to distribute the stool material throughout the glycerin. The 30 per cent. glycerin is prepared by adding glycerin to sterile 0.6 per cent. sodium chlorid solution.

Journal of Laboratory and Clinical Medicine, St. Louis

May, I, No. 8, pp. 541-630

42 *Experimental Cloudy Swelling of Kidney in Rabbit. W. R. Shannon, Minneapolis.
43 Progressive Lenticular Degeneration; Report of Case. F. J. Farnell, Providence, and A. M. Harrington, Howard, R. I.
44 *Specific Parenteral Digestion and Its Relation to Phenomena of Immunity and Anaphylaxis. J. Bronfenbrenner, Pittsburgh.
45 Serotoxin of Jobling. N. R. Smith, Ann Arbor, Mich.
46 Microscopic Study of Fresh Bile in Disease of Liver. H. L. McNeil, Galveston, Tex.
47 *Newer Laboratory Methods for Early Diagnosis of Pulmonary Tuberculosis. M. H. Kahn, New York.
48 Dissociation Curve as Index to Hydrogen-ion Concentration of Blood. R. W. Scott, Cleveland.
49 Simplified Hematocrit and Method for Determining Variations in Blood Volume. A. A. Epstein, New York.

42. **Experimental Cloudy Swelling of Kidney.**—The term "cloudy swelling" is used by Shannon to designate a turbid swollen organ without regard to the microscopic picture that may be present. To secure uniform results rabbits were used exclusively in this study. The normal rabbit kidney always contains, in the convoluted tubules, coarse albuminous granules. Usually these granules are so numerous in a few tubules that these appear dark in the fresh tissue. The granules are apparently thin-walled vesicles filled with fluid. They are best fixed by solutions containing formaldehyd. They are not fixed in solutions containing acetic acid. On the addition of 5 per cent. sodium hydroxid or potassium hydroxid these granules disappear suddenly. When one kidney is removed the dark tubules are increased in the opposite kidney during the first twenty-four or forty-eight hours, but the increase of albuminous granules is not sufficient to cause and definite change in the gross appearance of the kidney. Subcutaneous injections of tartrates produce a swollen, cloudy kidney, but there is no increase of albuminous granules. The cloudiness and swelling are apparently due to edema, anemia, tissue disintegration, etc. Intraperitoneal injections of autolyzed liver tissue produce a markedly cloudy and swollen kidney. The albuminous granules disappear entirely. The gross changes are apparently due to the same factors concerned in the tartrate experiments.

Chronic suppurative processes attended with marked emaciation cause an enormous increase of albuminous granules in the kidneys. These granules are often larger than the normal and irregular in shape, but they seem to have the same chemical composition. Acute toxemias cause a rapid disappearance of the normal albuminous granules. An acute toxemia superimposed on a chronic suppurative process causes a disappearance of the albuminous granules. Kidneys which show an enormous increase of albuminous granules usually give a normal phthalein output, and the cells are usually intact. This form of cloudy swelling is therefore probably not a degenerative change, but a physiologic response to an increase of protein waste products in the blood. There is no relation between the formation of albuminous granules and fatty metamorphosis. It is suggested by Shannon that the term cloudy swelling be discarded and that the several processes producing this appearance be considered separately.

44. **Specific Parenteral Digestion, Its Relation to Phenomena of Immunity and Anaphylaxis.**—In repeating the work of Abderhalden and his collaborators Bronfenbrenner found that, although under certain conditions of experiment, the antigen may be actually digested by the ferments of the blood of prepared animals, the ferments responsible for such digestion are not specific. In fact, as others have shown before, the digestive ferments are present in every fresh serum, and if set free, can digest any suitably prepared substratum in vitro, without any specific predilection. Bronfen-

brenner found that although the ferments concerned in the digestion are not specific (inasmuch as they can be made to digest any substratum), the phenomenon, as a whole is not devoid of a certain degree of specificity and therefore could not be reduced to mechanical absorption of antiferments.

A systematic study of this question brought him to the conclusion that the element of specificity lies, not in the ferment itself, but in the mechanism of its activation. Namely, he found that the apparent specificity of ferment action in vivo assumed by Vaughan, and demonstrated in vitro by the methods of Abderhalden, is due to the fact that the combination of specific serum with its corresponding antigen in vivo as well as in vitro, is followed by a radical change in the degree of dispersion of serum colloids. This physicochemical change in turn is followed by the activation of a normal, nonspecific ferment of the serum. If such a conception is correct, Bronfenbrenner says, the phenomenon of specific parenteral digestion may be explained on a basis very similar to that offered by the chemical theory of Vaughan, but instead of specific ferments, the digestion will be ascribed to normal nonspecific ferments, present in any fresh serum (complement?) and set free by a specific mechanism of combination between the antigen and antibody, very similar to that recorded by the meiostagmin reaction of Ascoli.

47. **Laboratory Methods in Pulmonary Tuberculosis.**—In fifty-nine cases of tuberculosis examined by Kahn, the serum test was positive in about 92 per cent. of the cases; while the Weiss test was positive in about 13 per cent. of the cases, and the diazo test in about 8 per cent. In first stage cases, the serum test was positive in 84 per cent., while the Weiss test was positive in 4 per cent.; in second stage cases the serum test was positive in 94 per cent. and the Weiss test was positive in 9 per cent., whereas in third stage cases, the serum test was positive in only 15 per cent. whereas the positive urochromogen test rose to 31 per cent.

Kansas Medical Society Journal, Topeka

May, XVI, No. 5, pp. 131-160

50 Nonunion of Fractures. L. T. Morrill, Peabody.
51 Case of Paralytic Ileus. G. R. Gage and C. W. Hall, Hutchinson.
52 Early Serum Treatment of Diphtheria in Children. F. C. Neff, Kansas City.
53 Tumors of Bladder. W. D. McVicker, Wichita.

Medical Record, New York

May 27, LXXXIX, No. 22, pp. 941-982

54 Public Health and Defective. M. S. Macy, New York.
55 Legacy of Intemperate Use of Tobacco. R. Abbe, New York.
56 Value of Examination of Applicants for Industrial Employment. A. H. Doty, New York.
57 Sterility in Female. W. P. Healy, New York.
58 Medical Literature as Specialty. F. Robbins, New York.
59 Arteriosclerosis. E. L. Hunt, New York.
60 Anatomic Cause of Frequency of Hydrocephalus in Childhood. W. Browning, Brooklyn.

June 3, No. 23, pp. 983-1028

61 Immunity, Natural and Acquired. W. H. Porter, New York.
62 Dietetic Treatment of Diabetes Complicated by Nephritis. H. S. Stark, New York.
63 Roentgen-Ray Treatment of Uterine Myomata. A. Stein, New York.
64 Nitrous Oxid Analgesia in Obstetrics. N. S. Heaney, Chicago.
65 Controlling Spread of Sputum. W. A. Manheimer, New York.
66 Epifascial Method of Injecting Mercury and Salvarsan Derivatives. A. L. Wolbarst, New York.
67 Therapeutic Value of Spleen Extract. H. R. Harrower, Los Angeles.

New York Medical Journal

May 27, CIII, No. 22, pp. 1009-1056

68 Hysterical Mutism. G. H. Makuen, Philadelphia.
69 Treatment of Muscular Rheumatism. W. F. Cheney, San Francisco.
70 Treatment of Tuberculous Adenitis by Roentgen Rays. R. H. Boggs, Pittsburgh.
71 Chorea; Its Treatment. M. Grossman, New York.
72 Tetanus; Surgical Complication in Present War. E. K. Tullidge, Philadelphia.
73 Antimeningococcic Serum in Joint Manifestations of Gonorrhea. F. Malleterre, Paris.
74 Addison's Disease of Syphilitic Origin; Report of Case. P. M. Schaffner and T. Howard, New York.
75 Curatelle and Modern Psychiatry. (To be concluded.) G. W. Jacoby, New York.

Surgery, Gynecology and Obstetrics, Chicago

June, XXII, No. 6, pp. 635-752

76 *Roentgen Ray Diagnosis of Gas and Pus Infections as Complications of Wounds With Deeply Buried Bullets or Shell Fragments. G. G. Davis, Chicago.
77 Fracture of Os Calcis. B. F. Lounsbury, Chicago.
78 *Origin of Hypernephroma of Kidney. A. Fraser, New York.
79 Twilight Sleep. C. B. Reed, Chicago.
80 Cases of End-To-End Suture of Bile-Ducts. T. F. Riggs, Pierre, S. D.
81 Simple Subparietal Rupture of Kidney; Report of Cases. F. G. Connell, Oshkosh, Wis.
82 *Bleeding Nipples; Report of Cases. D. Lewis, Chicago.
83 Dermoid Tumors of Mouth; Report of Case. P. K. Gilman, Manila.
84 *Hereditary Syphilis as Etiologic Factor in Spurs on Os Calcis; Report of Cases. P. P. Swett and H. F. Stoll, Hartford, Conn.
85 Thyroid Tumors of Bones. J. P. Kanoky, Kansas City, Mo.
86 Postoperative Ileus; Report of Case. W. M. Thompson, Chicago.
87 Old Art and New Science of Surgery. J. R. Eastman, Indianapolis.
88 Reflex Ileus of Renal Origin. D. N. Eisendrath, Chicago.
89 *Some Experiments With Rubber Gloves. C. E. Black, Jacksonville.
90 Injuries of Spinal Cord; Report of Case. A. Schachner, Louisville, Ky.
91 Thymus Death; Report of Case. F. H. Falls, Chicago.
92 Uterine Hemorrhages: Actinotherapy. H. Schmitz, Chicago.
93 Pyelitis of Pregnancy, With Special Reference to Its Etiology. W. C. Danforth, Evanston.
94 Primary Carcinoma of Urethra, Retention of Urine From Obstruction, Restoration of Function of Radium. G. E. Shoemaker, Philadelphia.
95 Infolding and Peritonealizing Stitch With Application of Same to Broad Ligament and Gallbladder. H. A. Shaw, Seattle.
96 *New Operation (Decoud's) for Treatment of Varicocele. D. Del Valle, Buenos Aires, Argentine.

76. **Roentgen Diagnosis of Gas and Pus Infections.**—In all cases in which the Roentgen ray has shown a "halo-like" shadow about the missile, Davis found clinically, at the operating table and in the laboratory, evidence of an infection caused by gas forming and pus forming organisms.

78. **Origin of Hypernephroma of Kidney.**—Of thirty-four so-called hypernephromas of the kidney studied by Fraser there is convincing evidence, from both the clinical and morphologic viewpoint, that one of the number was a neoplasm originating in an accessory nest of cortical suprarenal cells, although the possibility of origin from the cortical cells of a misplaced suprarenal composite cannot be denied. The patient in whom this tumor was found, was a female with pronounced male characteristics. In still another case of so-called hypernephroma of the kidney, the morphologic evidence tends strongly to support the view that the tumor arose from multiple nests of suprarenal cortical cells lying in or around the capsule of the kidney. In the remaining thirty-two instances, however, the morphologic evidence indicates that the tumors were derived from renal adenomas. In other words, it would appear from this that the majority of cases of hypernephromas is misnamed and should be classified as nephromas, the term hypernephroma being reserved for malignant tumors arising from cortical suprarenal cells.

82. Abstracted in THE JOURNAL, January 22, p. 303.

84. **Hereditary Syphilis; Spurs on Os Calcis.**—This paper is based on a study of nine cases, in three of which the symptoms recurred after temporary improvement, following the removal of the spurs. In the other six, no operations were performed. The diagnosis was confirmed in seven cases by Roentgen ray. As the result of the study of these cases of spur formation, Swett and Stoll believe that hereditary syphilis is responsible for many of these exostoses. The study of the family history suggests syphilis more frequently, perhaps, than does the examination of the patient himself, who rarely presents any obtrusive signs of hereditary syphilis; though a very careful examination will often reveal something that is suggestive. The Wassermann test was negative in all the cases.

89. Abstracted in THE JOURNAL, January 15, p. 218.

96. **New Operation for Treatment of Varicocele.**—This operation done by Del Valle diminishes the congestion of the veins by alternate ligatures and suspends the testicle at a convenient height, thus correcting the ptosis. He first exposes the external abdominal ring, then the spermatic cord. Then he dissects the veins, from the external abdominal ring to the

testicle, from the other parts of the cord. The operator carefully separates the veins into two groups, an anterior and a posterior. A catgut ligature is now passed and tied around the posterior group, one finger's breadth above the upper limit of the testicle. Another ligature (silk) is similarly applied to the anterior group but two fingers' breadth above the level of the catgut suture and left long. The anterior group of veins is passed through an opening in the fascia of the internal or external pillar so as to raise the testicle. The operation is finished by suturing the edges of the incision in the fascia together behind the loop of the veins, thus leaving each end of the incision open for the veins to pass through.

Washington Medical Annals

May, XV, No. 3, pp. 181-221

97 Case of Dystocia Following Ventral Suspension. W. S. Bowen, Washington, D. C.
98 Observations and Conclusions of Deputy Coroner. W. B. Carr, Washington, D. C.
99 Case of Fracture of Acetabulum. D. L. Borden, Washington, D. C.
100 Case of Mastoiditis, Complicated by Purulent Cerebrospinal Meningitis; Operation and Recovery. W. H. Huntington, Washington, D. C.

Wisconsin Medical Journal, Milwaukee

May, XIV, No. 12, pp. 487-524

101 Chronic Mouth Infection in Relation to Systemic Disease. R. H. Ivy, Milwaukee.
102 Wassermann Tests and Cerebrospinal Fluid Examinations Free of Charge. W. F. Lorenz, Mendota.
103 Cancer of Lower Lip. V. F. Marshall, Appleton.
104 Gonorrhea in Its Relations to Family. A. T. Holbrook, Milwaukee.
105 Case of Acute Ascending Paralysis Following Grippe. L. M. Warfield, Milwaukee.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

May 13, I, No. 2889, pp. 677-708

1 *Gerontal Constipation and Its Treatment. W. A. Hollis.
2 Sarcoma of Frontal Lobe Giving Rise to Ocular Signs Only. R. B. Hird.
3 Suture of Nerves, and Alternative Methods of Treatment by Transplantation of Tendon. R. Jones.
4 Importance of Method in Isolation of Pathogenic Organisms of Typhoid Group From Feces. C. H. Browning and L. H. D. Thornton.
5 *Examination of Fifty Dysentery Convalescents for Carriers. J. A. Arkwright, W. Yorke, O. H. Priestley and W. Gilmore.
6 *Easy and Rapid Method of Doing Widal's Reaction for Typhoid. A. C. Coles.
7 Treatment of Wound Infections. W. P. Morgan.

1. **Gerontal Constipation and Its Treatment.**—Among the causes of constipation in the aged, Hollis mentions prostatic enlargement, ineffective peristalsis and dryness of the intestinal mucosa which leads to excessive straining at stool, and may also account for the comparative frequency with which "volvulus" of sigmoid affects old men, the twisting of the gut being an immediate consequence of an overstrain. The treatment of gerontal constipation is medicinal, dietetic and manipulatory. So far as drugs in general are concerned, Hollis says, their action can at best be only palliative. Within these limitations and as a preventive of a colic cascara is very useful. It ought to be given in a full dose directly and falling off in quantity or quality of the daily evacuation is observable. The ordinary rules regarding the modified requirements of the aged man for meats and the satisfactory mastication of food should be in all cases carefully observed. Dental hygiene is also very important. The less stimulant the old man absorbs the better his ultimate chance of longevity. Cleanliness is undoubtedly the most important manipulative procedure. Congested piles, rents in anal mucosa, commencing prolapse, all rapidly yield as a rule to a régime of cleanliness. But in order that the hygienic procedure may produce the maximum effect, it must be started early. When there is much straining at stool, the gerontal right index-finger, well guarded, it may be, with two or three thicknesses of tissue paper, should be pressed on the perineum just behind the symphysis, and so relieve the abnormal pressure of an enlarged prostate on the rectum.

5. **Examination of Dysentery Carriers.**—Among fifty dysentery convalescents examined by the authors three to six months after the onset of their illness, nine were still excreting *E. histolytica*, two were still excreting *B. dysenteriae* (Shiga). These eleven men were therefore potential sources for the outbreak of fresh epidemics.

6. **Easy Method of Doing Widal's Reaction for Typhoid.**—The method devised by Coles is as follows: With a color grease glass writing pencil, or a piece of wax, draw a line across the middle of two slides at right angles to their long axes. Spread a film of the blood to be examined on one half of each slide, and, when dry, spread a film of normal blood as a control, on the other half of each slide. Dry. Place a small drop of an emulsion of killed typhoid bacilli on the center of each half of both slides, and rub the drop well over the film of blood, taking care not to pass from one half of the film to the other without sterilizing the needle. On one slide carefully place a cover glass on each half, taking care that the two cover glasses are well separated in the middle by the mark of the grease pencil. Place the other slide on a piece of wet blotting paper, and cover with a Petri dish to prevent evaporation for a period of fifteen to twenty minutes. At the end of that time dry carefully over the flame, and then stain. Examine both halves of the first slide under a moderately low power. At the end of fifteen minutes (often much sooner) distinct clumps of agglutinated bacilli will be seen, provided the case be one of typhoid or the blood of one who has been prophylactively inoculated with a typhoid vaccine, while on the other half, the control, the bacilli show no signs of clumping. The red cells are practically invisible, but the leukocytes are clearly defined, and it is quite easy, provided the film has been thin, to determine the presence or absence of leukocytosis, and to make, if necessary, a differential count of the various forms of white cells present.

Lancet, London

May 13, I, No. 4837, pp. 981-1024

8 Links in Chain of Research on Syphilis. J. E. R. McDonagh.
9 *Malignant Disease of Nose or Accessory Sinuses. S. Thomson.
10 Removal of Foreign Bodies From Esophagus and Bronchi. I. Moore.
11 *Presence of Lead in Urine in Four Cases of Trench Nephritis. C. P. White.
12 Unusual Case of Esophageal Cast. F. H. Jacob.
13 Case of Pleuropneumonia Treated With Phylacogen. F. Collins.

9. **Malignant Disease of Nose or Accessory Sinuses.**—The advantages of Moure's operation or lateral rhinotomy of the nose or accessory sinuses (through the face) are emphasized by Thomson and two cases are cited. In the first an endothelioma of the ethmoid and antrum. There has been no recurrence after five and a half years. The second case was one of epithelioma of left maxillary antrum. Moure's operation was done and there has been no recurrence after three and a half years.

11. **Lead in Urine in Trench Nephritis.**—White examined five specimens from trench nephritis (two of them from the same case at different times); two specimens from ordinary nephritis, each of them the mixed urines from two cases; and a normal urine to serve as a blank experiment. Lead was present in all the specimens from trench nephritis and in one of the mixed urines of ordinary nephritis. Iron was present in all the nephritic specimens and copper in most of them. Tin was also present in one specimen. This was the most recent case, and contained more lead than the others. A specimen from the same case a month later contained less lead, and tin was not found. White has come to the conclusion that copper is universally present in the tissues, and he has found it in normal urine to the extent of 0.2 mg. per liter. The iron, he says, can be attributed to the blood which was present in all cases, and possibly to the medicinal administration of iron. The presence of lead and tin in urine, however, he regards as abnormal. The constant presence of lead in these cases and the presence of tin in one of them suggests the possibility of the metals being derived from canned foods.

Bulletin de l'Académie de Médecine, Paris

May 2, LXXV, No. 18, pp. 491-533

14 *Abortive Treatment of Infection and Early Closing of War Wounds. (Désinfection et fermeture rapides des blessures de guerre. Résultats.) G. Dehelly.

15 *Operative Treatment of Detachment of the Retina. (Le traitement du décollement de la rétine et des choroidites exsudatives d'origine traumatique.) Bonnefon.

16 Gangrenous Process Over Arm and Back Following Vaccination of Adult Against Smallpox. (Cas de vaste gangrène phagédénique probablement causée par le "Bacillus pyocyaneus," à la suite de la vaccine.) Balzer and E. Moulard.

14. **Early Closure of War Wounds.**—Dehelly is surgeon at the hospital in charge of Carrel at Compiègne. He relates the ultimate outcome of Carrel's method of treating war wounds in 48 out of 76 cases. The 48 men had a total of 155 wounds, including a number with fractured bones. One hundred thirty-five of the wounds were closed before granulation had begun. (See abstract 36, THE JOURNAL, May 13, 1916, p. 1586). Of the 121 wounds closed before the twelfth day, healing was complete in less than thirty days in 119. This list includes 18 of the 22 with fracture. Of the total 155 wounds, it was thus found possible to close up early all but 12.6 per cent. and of the 135 thus closed, 88.25 per cent. were entirely healed by the end of the month. He adds that this shortening by two thirds the average healing period is far from being the only advantage of the Carrel method: The sterilization is so thorough that the lymph glands and bone surfaces heal without inflammation and hence there is no tendency to muscular contraction or stiffness from cicatricial tissue. The coaptation of the normal tissues causes them to grow together, retaining their suppleness, without an intervening stiff wall of scar tissue as when wounds are left to grow up spontaneously.

15. **Surgical Treatment of Traumatic Detachment of the Retina.**—Bonnefon emphasizes the way in which the war experiences are confirming the relative harmlessness of detachment of the retina following a trauma in comparison to that of endogenous origin. The condition is indispensable, however, that treatment be applied at once. The retina loses its vitality so rapidly after detachment that it must be restored to place on the spot. By the time the man reaches the base hospital the retina is injured beyond repair. He has cured completely three cases of extensive detachment of the retina with reduction of vision to perception of light. He obtains access by severing one of the rectus muscles as for an advancement operation. The region of the equator thus exposed is punctured deep at one or two points with the fine tip of the actual cautery at red heat. Two stitches are taken including muscle, aponeurosis and conjunctiva, to repair the breach, then absolute rest in bed, immobilization and atropin. The suture threads are removed the fifth day, and a few subconjunctival injections of saline after the eighth day may aid. In one of his cases vision had been reduced to perception of light but by the sixth day there was no visible trace of the detachment and visual acuity was 3/10 and became finally 8/10 and has persisted unimpaired during the three months since to date. This ignipuncture revulsion he has also found useful in treatment of contusion of the eyeball with intra-ocular effusion. It promotes absorption of an effusion either on the retina or in the vitreous body. In conclusion he reiterates the importance of promptness, saying that treatment of detachment of the retina is the only intervention on the eyes which should be undertaken at the front.

Presse Médicale, Paris

May 4, XXIV, No. 25, pp. 193-200

17 The Various Aspects of War Surgery. R. Le Fort.

18 Gas Gangrene in War Wounds. E. Sacquépée.

May 8, No. 26, pp. 201-208

19 *Prophylaxis of Spread of Infectious Diseases. (La méthode de Milne et la propagation des maladies contagieuses.) G.-H. Lemoine and Devin.

20 Combined Arsenic-Mercury Treatment of Syphilis. Favre and Longin.

21 *Technic for Hypochlorite Sterilization of War Wounds. (Stérilisation des blessures de guerre; technique.) G. Dehelly and Dumas.

19. Already summarized as it appeared elsewhere. See abstract 39, p. 1662.

21. **Continuous Irrigation Method of Treating Wounds.**—This article is practically a continuation of the one reviewed above, abstract 14. The exact technic for the continuous irrigation is here described. Figure 1 shows the glass receptacle holding up to 1 liter of Dakin's hypochlorite solution, and the rubber tube, 2 meters long, with an interposed glass drop-counter about 20 cm. below the receptacle. Figure 2 shows the rubber tube about 25 cm. long and Figure 3 a section of the same. These short tubes are used of various diameters. The lower end is tied and above that the tube is perforated, and is fitted with the sponge tissue which is sewed solidly to the wall of the tube and closed below to form a bag. Other tubes are used to drain away the fluid. They are about 25 or 35 cm. long and have no side perforations. The dressings used are made of carded cotton with a thin layer of absorbent cotton and the whole is wrapped in gauze. The dressing when finished is about 3 cm. thick and is passed once entirely around the limb. The aim is to have the sterilizing solution in constant contact with every part of the wound all the time. For a superficial wound all that is necessary is to cover the wound with a single layer of gauze and lay along over the wound, above this, one of the rubber tubes perforated with minute holes the length of the wound. This keeps the entire wound well moistened, the single layer of gauze not permitting secretions to accumulate under it while it prevents the holes in the tube from becoming obstructed. A deep cavity with small opening is treated with tubes perforated only close to the tip. Enough are used to carry one into every compartment of the wound, as shown in a cut. The fluid entering below pours out of the opening above. It may be necessary to introduce a gauze wick with the tube, to hold the tissues apart enough for this to occur, or the tube may be wrapped with gauze to hold back the fluid if the wound is emptied by gravity too rapidly.

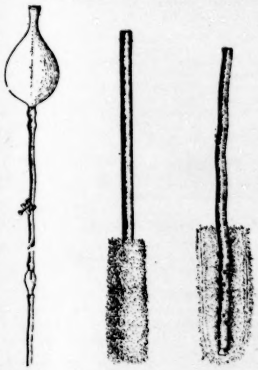

Figure 1 Figure 2. Figure 3.

The receptacle stands on a shelf fastened to the foot or head of the bed, and there must be as many receptacles as there are tubes used for the irrigation. The connecting tube is attached to the tube in the wound as soon as the wounded patient is placed in bed. Attempts to divert the fluid from a single irrigator into more than one tube always proved a failure. If the tube in the wound becomes blocked with a clot, it should be syringed free. For a small cavity, 5 drops a minute have proved ample. For a large wound, 20 drops is the rule. The attendant must ascertain that the wound is thoroughly irrigated throughout but that the bed is not wet. The cotton dressing is changed twice a day. The skin around is protected with petrolatum. The continuous sterilization is kept up for three or four days. Bacteriologic examination of swabs will confirm the progressive diminution in the number of germs suspected from the clinical aspect.

When the microbes have disappeared from the secretions, the instillation tubes are removed and a gently compressing dressing is applied. The next day, if there has been no oozing from the depths, the cavity below may be regarded as closed; only the skin still gapes and the lips of the wound are brought together. This can usually be done by the fifth day. It is better to draw them together with strips of plaster than to suture as this permits coaptating all parts of the wound and by applying the compression all around the limb

helps to close all the cavities below. Strips about 20 or 25 cm. long by 3 or 4 cm. wide are used. Half of the strip is stuck to the limb on one side of the wound and then, as the lips are brought together, the rest is wound around the other half of the limb. For very large wounds, two strips of plaster 7 or 8 cm. wide are used, fitted with a row of hooks such as are seen on men's shoes. The wound is then laced up like a shoe. The lacing is done with heavy rubber bands like those used in boys' slings. The traction from the rubber soon draws the lips together. The plaster strips are kept in place, like sutures, for five or six days. If it becomes necessary on account of oozing to undo them at any point, great care is taken not to disturb the healing processes.

Revue Médicale de la Suisse Romande, Geneva

April, XXXVI, No. 4, pp. 209-272

22 Means to Detect Simulation of Blindness. (De la simulation de l'amaurose et de l'amblyopie.) T. de Speyr.
23 *Prophylactic Heliotherapy. (La cure de soleil preventive.) L. Jeanneret.
24 *Dosage of Polypeptids and Amino Acids in the Blood. (Le dosage des polypeptides et des acides aminés dans le sang.) J. Amann.
25 *Charcoal as Source of Error in Tests for Occult Blood. (Le charbon comme cause d'erreur dans la recherche chimique du sang dans les selles.) A. Rapin.
26 *Hydrorrhea During Pregnancy. L. Du Pan.
27 *Ultimate Outcome of Thyroid Autograft. E. Kummer.

23. **"Preventive Sun Cure."**—Every day one or more groups of from twenty to thirty children gather at a certain spot in their quarter where a guide and assistant meet them and conduct the party to the banks of a lake not far from town. Here they spend the afternoon in games and gymnastic exercises, clothed only in bathing trunks. The aim is to apply Rollier's system of heliotherapy as perfectly in the limited time afforded as is possible, and the work is all modeled on that in his institution. It was organized a year ago by Dr. L. Jeanneret for the more delicate schoolchildren of the city of Basel, and it has proved successful beyond all anticipations. He advertised for helpers in the papers, asking young men or young women to give up one afternoon in each two weeks to a group of frail children to help make them robust. Reflection from the lake doubles or triples the effect of the sunlight. There were only five days during the entire summer in which the trips could not be made on account of the weather. A group of children too small to take the half-hour walk were provided with a sanded and fenced space for the purpose in one of the public parks in town. A regular system was followed each day, the walk to the lake, then rest or quiet games, then gymnastics and games of all kinds. Efforts are made to train the children in good habits of breathing. The chest diameter of the 200 children increased by 2.03 cm. on an average between July 14 and September 4, and the average increase in weight was 825 gm. Only four children failed to show this increase. The entire expense from May to October was about $21. When cold weather came, the children had their walk and the games, Saturdays, but they did not remove their clothing. Jeanneret urges that gymnastic exercises in schools should be taken with the trunk bare and in the open air when possible.

24. **Dosage of Amino Acids and Polypeptids in the Blood.**—Amann has worked out a technic which requires only 1 c.c. of blood serum for the colorimetric quantitative test for amino acids, as a supplement to the Abderhalden ninhydrin test. The test takes only a few minutes and comparison of the amino acid content of the blood and of the urine may throw light on the functional capacity of the kidneys. He regards dialysis as the most reliable means to remove the albumin from the serum.

25. **Charcoal as Source of Error in Testing for Occult Blood.**—Rapin has found that the charcoal given to mark off the feces or for therapeutic purposes is liable to prove misleading. Even in minute proportions it acts as a catalyzer with the Weber, Adler and Meyer tests for occult blood. He tests for occult blood by triturating in a mortar a little of the feces and solid benzidin, with 1 or 2 c.c. glacial acetic acid. Then he adds 2 or 3 drops of peroxid of hydrogen and mixes it well. A change to a blue tint shows up even very minute traces of blood. He warns that the salts of metals act as catalyzers, and hence this source of error must be eliminated beforehand. Raw milk, certain ferments and certain drugs also have a catalyzing action, and with these known sources of error he now lists charcoal. Even traces of charcoal may cause a misleading positive reaction.

26. **Hydrorrhea During Pregnancy.**—Du Pan reports three cases. In two the hydrorrhea was evidently traceable to a pre-existing metritis which induced a pathologic secretion. This, accumulating between the ovum and the uterus wall, was the cause of the placenta becoming detached at this point. This entailed slight hemorrhage and contractions of the uterus, soon subsiding under rest in bed. The hydrorrhea may thus be regarded as of decidual origin in these cases, but in the third case there were traces of blood during the first two months at times corresponding to the menstrual periods, and during the following months there was a small watery discharge at these periods. At delivery only two or three tablespoonfuls of fluid were found in the bag of waters. He ascribes these phenomena to some slight early detachment of the placenta from contraction of the uterus at the time of the menstrual periods. The membranes were evidently torn a little during this, and later, at each recurrence of the time corresponding to the menstrual periods, the contractions of the uterus pumped out a little of the amniotic fluid. The laceration must have been so high up that no fluid escaped from it spontaneously.

27. **Thyroid Autograft.**—Kummer's patient was a woman of 36 with bilateral goiter compressing the trachea and extending outward beyond the ears. Both lobes were removed nearly completely but the structure of the thyroid seemed normal at certain points, and some segments of this were implanted under the skin over the right acromion by Cristiani's technic. The portion of the thyroid left undisturbed gradually enlarged as also the grafts in the acromion region. A scrap of the graft was excised three years later, and the microscope confirmed that it had not only taken root but had proliferated. The result, he says, was a kind of small neothyroid gland which had apparently shared in the total functioning of the thyroid gland. Nine years later, that is, twelve years after the operation, another scrap was excised, and the findings confirmed that the graft had continued its functioning. No sign of inflammation had been observed at any time. The case is illustrated.

Correspondenz-Blatt für Schweizer Aerzte, Basel

April 22, XLVI, No. 17, pp. 513-544

28 Experiences in Hygienic Mission in Serbia. (Aus meinen Erlebnissen als Hygieniker in Serbien.) L. Hirschfeld.

Pediatria, Naples

April, XXIV, No. 4, pp. 193-256

29 *Lymphogranulomatosis in Boy of Five With Necropsy. (Un caso di linfogranulomatosi infantile.) A. F. Canelli.
30 Alkaptonuria From Birth in Girl of Six. (Contributo allo studio dell'alkaptonuria nell'infanzia.) S. Maggiore.

May, No. 5, pp. 257-320

31 *Operative Treatmentt of Congenital Stenosis of the Pylorus. (La stenosi spastica ipertrofica congenita del piloro e l'operazione di Rammstedt.) H. K. Hirschfeld.
32 *Addison's Disease in Girl of Ten. G. Rutelli.
33 Present Status of Treatment of Spasmophilia. O. Cozzolino.

29. **Lymphogranulomatosis in Child.**—The history of infantile lymphogranulomatosis is reviewed and a case described with illustrations of the necropsy findings. The patient was a girl of 5 and the disease ran its fatal subacute course in seven months, with high fever and anemia but no hemorrhagic tendency. The histologic findings are discussed with much detail, comparing them with similar cases on record. The lungs showed miliary tuberculosis and atypical tuberculosis was evident in the lymph glands in the neck and lungs, lumbar and aortic regions and mesentery. Canelli adds a bibliography with titles in full of 159 articles on the subject, including a number from America.

31. **Operative Treatment of Congenital Stenosis of the Pylorus.**—Hirschfeld writes from Zurich to extol the benefits of Rammstedt's operation in rebellious cases of congenital

spastic-stenosis with hypertrophy of the pylorus. She discusses the clinical picture and the various other measures that have been proposed to correct it. Rammstedt applied Weber's partial pyloroplastics in 1911, but found that the vomiting kept up afterward. In later cases he refrained from suturing the flaps and merely fastened a piece of omentum between them. This modification solved the problem, and the operation has proved unfailingly successful in his and others' hands. The musculature of the pyloric ring is incised lengthwise down to the mucosa, without opening the latter. The lips of the incision are not sutured; the pylorus is reduced and the abdomen closed. In the three cases reported the children were all males, all but one breast fed, and the signs of the stenosis became apparent the second or third week. The two preceding children in one of the families had also had this congenital stenosis of the pylorus. One succumbed and one recovered under internal measures alone. In all the cases the Rammstedt operation proved simple and harmless, even in the great debility of these children, and it was undoubtedly a life-saving measure.

32. Addison's Disease in Little Girl.—The tendency to bronzing was first noticed at about the age of 4. At 10 it was extremely pronounced, while the blood pressure was rather low and the child was growing progressively weaker. The appetite and digestion have always been good and the child has kept well nourished throughout. The hemoglobin and red count are normal. Tests for malaria and syphilis were constantly negative, but the Pirquet tuberculin skin test was strongly positive. An older child in the family had died of tuberculosis and the little patient had a history of enlarged glands in the neck and spina ventosa. The urine findings were apparently normal except for slightly subnormal figures for uric acid (0.3:1,000) and for creatinin (0.2:1,000).

Semana Medica, Buenos Aires

XXIII, No. 8, pp. 199-230

34 Vertebral Caries. (Consideraciones sobre el mal de Pott.) J. M. Jorge.
35 Correction of Abnormally Large Genital Vestibular Canal. (Caso de deformacion genital externa en la mujer por detencion en la evolucion morfologica.) J. Salvador.
36 Antigonococcus Vaccine. G. G. Soldevilla.

No. 9, pp. 231-262

37 Serotherapy of Pneumococcus Disease. (25 casos recopilados de neumonia fibrinosa tratados por el Haptinogeno-Neumo.) H. Dasso.

No. 10, pp. 263-290

38 *Cesarean Section on Account of Tumor. (Cesarea segmentaria suprasinfisiaria. E. Zarate.
39 *Paralysis From Vertebral Tuberculosis. (Paraplegias potticas.) J. M. Jorge.
40 Treatment of Whooping Cough by Subcutaneous Injection of Extract of Patient's Sputum. (Etiologia y tratamiento de la coqueluche.) J. Melfi.
41 To Protect Schoolchildren Against Malaria in Malarial Countries. (Higiene antimalarica escolar.) E. Cacace.

38. Cesarean Section on Account of Tumor.—In Zarate's case a tumor in front of the promontory impeded delivery and he extracted the child by an incision in the lower segment of the uterus according to the Fromme-Fraipont technics. The peritoneum had been sutured together above to shut off the peritoneal cavity, and the operation was extremely simple and easy, with very little loss of blood. The wound soon healed, with no impairment of the movability of the uterus.

39. Paralysis from Vertebral Tuberculosis.—Jorge discusses Pott's disease in general and a typical case in particular, theorizing as to causes, treatment, etc. Malignant tumors and parasitic cysts in the spine might present neuralgic, radiating pains like those in Pott's disease, but the pain is generally more intense. At a more advanced stage there may be motor, sensory and trophic manifestations as with vertebral caries, but the clinical picture is quite distinct. Syphilis, on the other hand, may present a practically identical clinical picture, especially as a tardy manifestation of inherited syphilis. The child may be apparently healthy until approaching puberty, when the gait may gradually assume the spastic type and the spine become semirigid with exaggeration of the tendon reflexes. Lumbar puncture may reveal lymphocytosis and the positive Wassermann reaction will confirm the diagnosis of tardy syphilis. Roentgenoscopy should never be omitted in these cases, but does not always give decisive findings. Paraplegia following an acute infectious disease generally subsides in a few weeks of repose. The spine is flexible in these cases. In all spinal troubles, Jorge remarks in conclusion, the surgeon should bear the possible medical affections in mind, and the clinician should never forget the possibility of vertebral tuberculosis alone or associated with other trouble.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

April 15, I, No. 16, pp. 1313-1408

42 *Epidemic Cerebrospinal Meningitis. J. P. Bijl and R. N. M. Eykel.
43 Experimental Research on Vaccinal Allergy. R. P. Van de Kasteele.

April 22, No. 17, pp. 1409-1500

44 *Importance of Immunity, Allergy and the Tuberculin Reaction for Dermatology. (Iets over de beteekenis der immuniteit, allergie en de Moro-reactie voor de dermatologie.) W. L. L. Carol. Concluded in No. 18.
45 Increase in Height of Male Population of the Netherlands. (De toeneming der lichaamslengte van de mannelijke bevolking in Nederland.) A. M. Benders.
46 Lipoma in an Inguinal Hernia in a Woman. (Een eigenaardig geval van liesbreuk bij een vrouw.) J. H. Hoogenboom.

42. Epidemic Meningitis.—Bijl is chief of the public health service and he here reviews the experiences in the Netherlands with epidemic cerebrospinal meningitis during the last ten years. There were no cases known in 1914, but fifty-four were reported in 1915 with a mortality of 92 per cent. without serum treatment, and of 30 per cent. with it. The incubation period was less than three days in some and over five days in others. Prussia had several hundreds of cases during this same year and England in the first seven months of the year had recorded 3,378. Bijl warns physicians in general to be on the lookout for imported meningitis, and that lumbar puncture should be done on mere suspicion of the disease. The fluid is examined free of charge at the central laboratory, and the trained officials of the public health service are empowered to assist the general practitioner in doing lumbar puncture on civilians on request. He suggests that the germs may linger in the accessory sinuses of the nose after clinical recovery. It is wise to commence serotherapy in severe cases without waiting for bacteriologic confirmation of the diagnosis. The antiserum usually should be injected daily for three days in succession, and then every day or second day. One soldier recovered after six injections, one girl of 6 after four. An English exchange reports recovery after seventeen injections in one case. In some of the Netherlands cases the patient might have recovered under the serotherapy if it had been commenced earlier or the doses had been larger or the intervals shorter. April and May are called the "meningitis months." Repeated examination seldom disclosed a carrier in the environment, but one "contact" was found whose serum agglutinated meningococci, although none could be discovered in his nasal secretions. Agglutination is not a positive sign of infection, but it may corroborate other signs. In one family the three smaller children developed meningitis within two days. No meningococci could be found in the nasal secretions of the parents and other children examined the sixth day, but the serum of all agglutinated at 1:50.

44. The Tuberculin Ointment Reaction in Dermatology.—Carol devotes nine pages to a tabulation of the details of fifty cases of various skin affections tested by the Pirquet tuberculin skin test and the Moro percutaneous tuberculin ointment test. A specific reaction was obtained regularly with lichen scrofulosorum, occasionally with tuberculids and repeatedly in the one case of lichen nitidus. With syphilids, the tests were usually negative, but occasionally a positive response was elicited. He reports further much benefit from the tuberculin treatment according to the Sahli-Ponndorf technic in cases of papulonecrotic tuberculids and of erythema induratum, although with the latter the bed rest was undoubtedly an important factor in the improvement.

Hygiea, Stockholm

LXXVIII, No. 8, pp. 481-528

47 Prophylaxis of Disease in Swedish Barracks. (Sjukligheten i våra kaserner och dess bekämpande.) N. Brinke.